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Verb Clusters

A study of Hungarian,
German and Dutch

Edited by

Katalin É. Kiss

Henk van Riemsdijk

Verb Clusters

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Verb Clusters: A study of Hungarian, German and Dutch
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Verb clusters

Some basic notions

Katalin É. Kiss and Henk van Riemsdijk

1. Opening remarks

Many languages have constructions in which verbs cluster. This may often simply be the result of center-embedded complementation in SOV-languages, but languages find many other ways to cluster verbs: they make use of auxiliaries, they move verbs into each other's proximity, they incorporate verbs, or they use serial verb constructions. Often, the resulting verb cluster has special properties, such as unexpected ordering of the verbs in the cluster. And frequently, the resulting complex sentence is somewhere between multi-clausal and mono-clausal. Verb clusters, therefore, constitute an interesting sub-field of linguistic enquiry that addresses questions that range from morphological issues via syntax to semantic problems.

Exceptionally large verb clusters (up to five or even more verbs) are found both in Hungarian and in the West-Germanic OV-languages. And furthermore, they show a number of remarkable and unexpected similarities in their structure, in particular in non-canonical orderings of the verbs. From the perspective of the genetic origin of these languages (Indo-European vs. Non-Indo-European) this is quite surprising. But from the perspective of language contact, the similarity is perhaps less surprising; after all, these languages (more specifically the South-Eastern representatives of the contiguous West-Germanic OV-language group) have existed in close contact for a considerable amount of time. In other words, it could be the case that we are seeing an areal syntactic feature. What we present in the present book is essentially an exploration of the properties of these constructions in the two geographical domains and a survey of the theoretical approaches that can be adopted in accounting for verb cluster phenomena of this kind.

The present book by no means purports to cover the many angles that should be covered in a full-scale investigation of a language contact situation. We simply have too little information about and insight in the historical development of these

particular phenomena in the languages in question and the incidence and patterns of multilingualism in the contact area as far as verb clusters are concerned. What this book does offer is a detailed syntactic study of the relevant verb cluster phenomena. It provides an extensive empirical survey of the patterns found, including ample dialect information. It also discusses a variety of theories that have been devised to account for the existence and structure of verb clusters. And it contains articles that examine specific factors or aspects that play a particularly important role in the syntactic analysis of verb clusters: prosody, aspect, basic word order and morphology. In this sense, the book provides the syntactic underpinnings for a more extensive, multidisciplinary investigation of this widely overlooked but extremely rich and potentially fertile area of syntactic investigation.

2. Some properties of verb clusters: The view from Germanic

2.1 Is there a cluster?

In Dutch, there are two main strategies for complementation: extraposition and verb raising. The latter term is the one used mostly in the generative syntax tradition, but it is somewhat theory laden, so it has been replaced by ‘verb cluster’ (VC) here, which should be taken in a somewhat neutral interpretation because it too is potentially misleading: either it refers to a string of more or less adjacent verbs, or it refers to a string of verbs that form a constituent together at some level of analysis. Similarly, by extraposition (EX) we mean clausal units in the clause-final position, that is, to the right of the matrix verb cluster. In other words, by the use of this term we do not mean to take a side in the question of how extraposition structures are to be derived. The issue of the constituency of the VC is at the core of the present section.

The two variants are exemplified below for German and Dutch:

- (1) a. ...*dass er verspricht* [*eine Geschichte zu erzählen*] (EX)
 that he promises a story to tell
 a'. ...*dat hij belooft* [*een verhaal te vertellen*]
 b. ...*dass er* [*eine Geschichte zu erzählen*] *verspricht* (VC)
 b'. ...*dat hij* [*een verhaal belooft te vertellen*]

In (1a), the complement clause, here infinitival with a controlled subject, is integrally placed at the end of the clause. We need not be concerned with extraposition clauses except to the extent that they are used as a standard of comparison against which VC-examples are checked. As can easily be seen in (1b), the two verbs here are adjacent, and the question indeed arises whether such sequences of verbs, which

can sometimes attain a length of up to six or more verbs, have any special properties or status in syntax, morphology, or semantics.

It was Evers (1975) who first argued that indeed VCs were constituents which, in his proposal, arise from adjoining the embedded verb to the matrix verb. This idea was inspired quite directly by the fact that in the Dutch example (1b') the order of the verbs is inverted, raising immediate questions as to the constituent structure. The structure would then be something like (2):

- (2) a. ...*dass er* [*eine Geschichte* []_i] [*zu erzählen_i verspricht*]
 b. ...*dat hij* [*een verhaal* []_i] [*belooft te vertellen_i*]

Part of Evers' evidence for this constituent structure came from gapping, but much of it is unclear and furthermore too little is known about the properties of gapping to base any firm conclusions on such considerations. See Evers (1975) for discussion.

2.2 Adjacency

A second line of argumentation which is relevant, though not, perhaps, conclusive, is the adjacency which is found among the verbs, at least in Dutch. The situation in German is more complex, a matter to which we return briefly in Section 2.5 below. The following discussion is based (almost verbatim) on the presentation of these facts in van Riemsdijk (1998).

There are two logically possible sources for intervening elements, extraposed elements in the embedded clause, or elements intervening between the matrix verb and the complement clause. This is schematically shown in (3).

- (3) *...[MATRIX...[COMPLEMENT...[e]_i W₁] W₂[V_j V_i]] unless W₁, W₂ = Ø

Consider first the case of W₁. Suppose we have an embedded clause with a PP that can be extraposed under normal circumstances, which obtain, for example, when the (bracketed) complement clause is itself extraposed. This is illustrated in (4).

- (4) a. *dat hij probeert [de emmer met een lepel leeg te scheppen]*
 that he tries the bucket with a spoon empty to
 scheppen
 scoop
 'that he tries to scoop the bucket empty with a spoon'
 b. **dat hij probeert [de emmer leeg met een lepel te scheppen]*
 c. *dat hij probeert [de emmer leeg te scheppen met een lepel]*

Note that the PP cannot be put between the resultative adjective (*leeg*) and the verb, a fact which is relevant for the detection of PP-extraposition after the removal of the verb under V-to-C Raising.

The verb *proberen* ‘try’ admits not only the extraposition option, but also the V-to-V raising variant.

- (5) a. *dat hij [de emmer [e]_j met een lepel_j leeg [e]_i] probeert te [scheppen]_i*
 b. **dat hij [de emmer [e]_j leeg [e]_j met een lepel_j] probeert te [scheppen]_i*
 c. *dat hij [de emmer [e]_j leeg [e]_i] probeert te [scheppen]_i met een lepel_j*

Since under V-to-V raising the verb is removed from its own clause, it is more difficult to see whether extraposition of the PP has applied in that clause. But in the example in (5), the position of the PP with respect to the resultative adjective *leeg* shows unambiguously that extraposition has applied, as can be concluded from the comparison of (5a) and (5c). What the examples in (5a) and (5c) show is that extraposition of the PP has to be across the whole verb cluster, that is, it has to take place in the matrix clause. If it applies in the embedded clause, as in (5b), V-to-V raising is blocked and an ungrammatical structure results.

With regard to W_2 , the main evidence comes from the following generalization. There are verbs that combine with elements to their immediate left. These elements include resultatives, prepositional particles, predicative adjectives and the like. The resulting combination is often called a complex predicate. But no verb can take one of these elements *and* a V-to-V raising complement. For example *staan* ‘stand’ is a raising verb, but *recht staan* ‘stand straight’ is not.

- (6) a. *dat hij [een lied [e]_i] staat te zingen_i*
 that he a song stands to sing
 ‘that he is standing singing a song’
 b. **dat hij [een lied [e]_i] recht staat te zingen_i*
 ‘that he is standing straight singing a song’

Similarly, the verb *beginnen* ‘begin’ is a raising verb, but the synonymous verb particle combination *aan vangen* ‘begin’ is not. In this case, however, both also have an extraposition variant.

- (7) a. *dat hij begint [Nederlands te leren]*
 that he begins Dutch to learn
 ‘that he begins to learn Dutch’
 b. *dat hij [Nederlands [e]_i] begint te leren_i*
 (8) a. *dat hij aan vangt [Nederlands te leren]*
 that he PRT VERB Dutch to learn (also: ‘begins’)
 b. **dat hij [Nederlands [e]_i] aan vangt te leren_i*

We take these considerations to indicate very clearly that adjacency of the two verbs is a necessary condition on the application of V-to-V Raising.

2.3 Partial movement and nominalization

Other phenomena which are relevant to the issue of whether there is a cluster include partial movement and nominalization. We will limit ourselves here to a brief illustration of the type of issue involved. Take partial movement first. It is a known fact that finite forms of verbs can be topicalized, as in the following examples:

- (9) a. *Opgelost heeft hij het probleem nog niet*
 solved has he the problem yet not
 b. *Lezen kan hij dit boek slechts met een speciale bril*
 read can he this book only with (a) special glasses

Note first that these may well be derived from verb clusters themselves, in the sense that the non-topicalized version has verb strings of the relevant kind:

- (10) a. *...dat hij het probleem nog niet heeft opgelost*
 b. *...dat hij dit boek slechts met een speciale bril kan lezen*

On the other hand, in an example like (5) topicalization of certain subparts is possible while others are not:

- (11) a. **[Te scheppen]_i geloof ik niet dat hij de emmer met een lepel leeg probeert*
 []_i
 b. ?*[Leeg te scheppen]_i geloof ik niet dat hij de emmer met een lepel probeert*
 []_i

Possibly, such considerations reveal something about the constituent structure.

A second set of facts, which I will simply mention in passing, is that VCs can be nominalized in their entirety:

- (12) a. *dat voortdurende leeg proberen te scheppen van die emmer*
 this continual empty trying to scoop of that bucket
 met een lepel
 with a spoon
 b. *het uilen naar Athene willen dragen van die jongelui*
 the owls to Athens wanting to.carry of those youngsters

This could indicate that indeed VCs form a constituent which is input to whatever processes give rise to nominalizations in the grammar. Work in recent decades has strongly indicated, however, that morphology and syntax cannot be separated as

neatly as was previously thought, thereby leaving much room for argument. See below for a few further remarks on morphology and VCs.

2.4 Clause union and transparency phenomena

One of the richest sources of evidence that VC constructions are quite different in nature from their extraposition counterparts comes from phenomena which suggest that the clausal boundaries, if they were ever there, are much weaker in VC constructions than in extraposition complements. The main evidence comes from clitic movement, scope of negation and adverbs, double negation and anaphor binding. Below we will just present a brief summary of some of the relevant phenomena, contrasting VC with EX. Most of these phenomena have been explored initially in the seminal work of Evers (1975). Readers to whom Dutch texts are accessible may wish to consult the discussion in Model (1991).

Long clitic movement

Weak pronouns or clitics can move, both in Dutch and German. In German, this movement is more spectacular, since the clitic may move into a pre-subject position and end up cliticized to C°. Clitic movement is clause-bound, however. We therefore use German to illustrate the fact that clitic movement is clause-bound when the clitic is extracted from an extraposed complement clause, but clitic movement to the pre-subject position of the matrix clause is possible in VC situations. This is illustrated in (13) and (14):

- (13) a. ...weil **mir** der Peter [PRO [e] ein Auto zu verkaufen]
 because me the Peter a car to sell
 beabsichtigte (VC)
 planned
 b. *...weil **mir** der Peter *beabsichtigte* [PRO [e] ein Auto zu verkaufen] (EX)
- (14) a.weil **da** sicher keiner [PRO etwas [e] drauf zu legen]
 because there surely noone something on to put
 probiert (VC)
 tries
 b. *...weil **da** sicher keiner *probiert* [PRO etwas [e] drauf zu legen] (EX)

To some speakers the b-sentences are less than fully ungrammatical. This phenomenon is called ‘the third construction,’ to which we return in Section 2.8.

Clearly, complement clauses are transparent to clitic movement under VC but not under EX. That is, VC may be said to ‘create’ mono-clausal structures.

Scope of adverbs and negation

Normally speaking, the scope of adverbs and negation is also limited by the next higher clause boundary. Again, the VC-variant turns out to be transparent, and hence it favors the wide-scope reading (though both readings are available), while the EX-variant excludes the wide-scope interpretation:

- (15) a. ...*weil er uns* [PRO *das Auto erst morgen zu reparieren*]
 because he us the car only tomorrow to repair
 versprechen kann
 promise can
 (i) ?promise tomorrow
 (ii) repair tomorrow (perhaps only in the NALI-option, where NALI
 = non-adjacent lefthand infinitive – see below)
- b. ...*weil er uns versprechen kann* [PRO *das Auto erst morgen zu reparieren*] (ii)
- c. ...*weil er uns erst morgen versprechen kann* [PRO *das Auto zu reparieren*] (i)

The same behavior is found with the scope of negation: (16a) is ambiguous while (16b) only yields the narrow-scope reading.

- (16) a. ...*weil ihn der Hans* [PRO *kein Geld anzunehmen*] *zwang*
 because him the Hans no money to.accept forced
 (i) H. did not force him to accept any money
 (ii) H. forced him not to accept any money
- b. ...*weil ihn der Hans zwang* [PRO *kein Geld anzunehmen*] *(i), (ii)

Again, we may conclude that the VC-construction exhibits certain mono-clausal properties.

Double negation

Given that double negation (modulo constituent negation) is generally excluded in simplex clauses, another text can easily be constructed to detect mono-clausality. Indeed, we find that double negation is possible with EX but not with VC.

- (17) a. ?*...*weil ihn der Hans nicht* ('not') [PRO *kein Geld anzunehmen*] *zwang*
 b. ...*weil ihn der Hans nicht zwang* [PRO *kein Geld anzunehmen*]

Anaphor binding

Consider finally the case of anaphor binding. Bound anaphors are expected to be ungrammatical unless there is an antecedent in the same simplex clause. Hence

if VC-constructions exhibit mono-clausal properties we expect apparent long distance anaphors to occur under VC, but not, of course, under EX. This expectation is borne out.

- (18) a. ...weil die Marianne den Peter schon oft [PRO für sich zu
because the Marianne the Peter already often for SELF to
arbeiten] zwang
work forced
(i) sich = Marianne
(ii) sich = Peter
- b. ...weil die Marianne den Peter schon oft zwang [PRO für sich zu
arbeiten]
(i) *sich = Marianne
(ii) sich = Peter

There is, then, ample evidence to show that VC induces a certain amount of transparency. The contrasts noted here are found *mutatis mutandis* with equal clarity in Dutch. Whether the resulting structures are completely mono-clausal is a difficult question. The ambiguity that we observed with the scope of adverbs and negation may suggest that the structures themselves are, in a sense, ambiguous between a mono-clausal and a bi-clausal interpretation. This question is quite difficult to assess, because the bi-clausal properties of CV-constructions may well be attributable (in German) to the existence of non-EX and non-VC complement structures.

German is indeed particularly complicated in that alongside the two extreme opposites VC and EX, which are the only ones found in Dutch, there is a ‘middle of the road’ construction which we will refer to as NALI (for ‘Non-Adjacent Lefthand Infinitivals’). These have the general structure of German VCs, but (often) with some element, frequently an inherent reflexive, intervening between the matrix and the embedded verbs. The examples below show that NALIs yield intermediate results on the tests given.

Long clitic movement in NALIs

- (19) ?*...weil mir der Peter [PRO [e] ein Auto zu verkaufen] sich
because me the Peter a car to sell REFL
vorgenommen hat
planned has

Scope of negation in NALIs

- (20) ...weil der Hans [PRO kein Geld anzunehmen] sich
 because the Hans no money to.accept REFL
 vorgenommen hat
 planned has
 (i) *did not plan to
 (ii) planned not to

Double negation in NALIs

- (21) ?*...weil der Hans [PRO kein Geld anzunehmen] sich nicht vorgenommen hat

Anaphor binding in NALIs

- (22) ...weil die Marianne [PRO für sich zu arbeiten] nur den Peter
 because the Marianne for SELF to work only the Peter
 gezwungen hat
 forced has
 (i) ?*sich = Marianne
 (ii) sich = Peter

It has been suggested (cf. van Riemsdijk 1984, 1994) that it is precisely the NALI-construction that gives rise to clausal pied-piping in German, but more generally speaking, the status of NALIs remains largely unclear.

2.5 Morphological properties

Alongside VC, Dutch and German have quite extensive ways of incorporating nouns, adjectives and prepositions into a verb. An example illustrating the incorporation of adjectives was given above in (5). The N-, A-, and P-incorporation phenomena are notorious for their borderline status between syntax and morphology. Here are some of the main considerations.

A. $[X^0 + V^0]$ is syntactically transparent:

There is an obligatory split under verb second:

zij belt hem op vs. *zij opbelt hem
 she calls him up she up-calls him

An optional split occurs under VC-formation:

...dat zij hem wilde opbellen vs. dat zij hem op wilde bellen
that she him wanted up-call that she him up wanted call

B. $[X^0 + V^0]$ is morphologically active:

The $[X^0 + V^0]$ -combination can be input to morphological processes, in particular to *her-* prefixation as in

her-in-delen 're-sub-divide'
her-droog-leggen 're-dry-lay'

The stress pattern is identical to the one found in 'true' compounds:

OP-bellen 'up call' cf. *THEEkan* 'tea pot'

Idiosyncratic (non-compositional) semantics, and therefore lexical listedness, is the rule rather than the exception. The typical special meanings that are found with, say, particle verbs in English are found here as well. This is also true for many N-incorporation cases such as *stof-zuigen* ('dust suck' = 'to vacuum') or A-incorporation cases such as *bloot-staan* ('naked stand' = be exposed).

It is worth noting that VCs cannot straightforwardly be brought in line with N/A/P-incorporation in that the latter two criteria yield the opposite result: VCs are not subject to *her-*prefixation, cf. (23a) vs. (23b); and VCs have phrasal rather than compound stress (cf. 23c):

- (23) a. *...dat men het altijd her-kan-proberen
that one it always re can try
b. ...dat men het altijd opnieuw kan proberen
anew
c. ...dat je het nu al [schijnt te kunnen komen
that you it now already seem to be-able-to come
HALEN]
get

VCs are semantically transparent, that is, largely compositionally interpretable. Exceptions are relatively rare. *Laten* ('cause, let') in combination with perception verbs (*laten zien*, *laten horen*, *laten ruiken*, *laten voelen*) means 'present for visual/aural/olfactory/tactile perception' rather than 'cause or permit to see/hear/smell/feel'.

Table 1. Types of trigger verbs in German

VC-triggers	inf-mk*	ECM*	class	Examples
Auxiliaries	Ø	NO	closed	<i>haben</i> 'perf.', <i>werden</i> 'pass.'
Modals	Ø	NO	closed	<i>können</i> 'be-able-to', <i>wollen</i> 'want', <i>helfen</i> 'help'
Causatives	Ø	YES	closed	<i>lassen</i> 'let, make'
Perception verbs	Ø	YES	closed	<i>sehen</i> 'see', <i>hören</i> 'hear'
Raising verbs	<i>zu</i>	NO	closed	<i>scheinen</i> 'seem'
Temporal aspect	<i>zu</i>	NO	closed	<i>beginnen</i> 'begin'
Optional triggers	<i>zu</i>	NO	semi-open	<i>versuchen</i> 'try', <i>behaupten</i> 'claim'

*Abbreviations: inf-mk = infinitive marker (bare infinitive or inf. with *zu*); ECM = Exceptional Case Marking (i.e. overt and accusative case marked subject in the complement clause – AccCumInf construction)

2.6 Trigger verbs

The list of matrix verbs which enter into VC constructions is not small, but it is still limited. Nevertheless, there is considerable variety among these VC-triggers. By way of illustration, Table 1 presents the situation for German.

2.7 Ordering within a verb cluster

A simple way of putting things is that German has a nested structure while Dutch has an overlapping dependencies structure. In other words:

German: [... [... [... [... [.....V₁] V₂] V₃] V₄] V₅]
Dutch: [... [... [... [... [..... [V₅ V₄ V₃ V₂ V₁]

The corresponding examples would be like this:

- (24) a. ...*dass wir ihn dieses Problem lösen₁ lassen₂ müssen₃ wollen₄*
that we him this problem solve let have.to want
sollten₅
should
'that we should want to have to let him solve this problem'
b. ...*dat wij hem dit probleem zouden₅ willen₄ moeten₃ laten₂ oplossen₁*

This is putting things very simplistically. Dutch has deviations in the direction of the German pattern, German has quite a number of deviations in the opposite direction. And when 'dialects' such as West Flemish and Swiss German are included, the situation gets even more complex. Furthermore, there is a lot of subdialectal variation. And, we see also that some of the inversion phenomena do not only af-

fect the verbs, but also their dependents. This way we get patterns like the following, which is from Swiss German.

- (25) a. *wil mer irem maa en uur händ wele schänke*
 because we her husband a watch have wanted to.give
 ‘because we wanted to give her husband a watch’
 b. *wil mer irem maa händ en uur wele schänke*
 c. *wil mer irem maa händ wele en uur schänke*
 d. *wil mer händ irem maa en uur wele schänke*
 e. *wil mer händ irem maa wele en uur schänke*
 f. *wil mer händ wele irem maa en uur schänke*

This pattern has come to be known as ‘Verb Projection Raising’. For details, both on the ordering patterns and on VPR, see Haegeman and van Riemsdijk (1986). For current purposes, the main questions here are the following:

- Do the reorderings within the VC reflect differences in syntactic structure, or are they, in a sense, purely phonological?
- Can these reorderings be described in terms of inversion at binary branching nodes?
- Is VPR an instance of the same construction as regular VC constructions, or is it a construction with properties of its own?
- Do inversions of both kinds affect the semantics of their clauses in any way?

2.8 Approaches to the analysis of verb clusters in Germanic

This is not the place to pursue in any detail how VC constructions should be analyzed in whatever theoretical framework. In fact, the bulk of the articles in the present volume are precisely about this question. At this point, we will just indicate a number of the overall tacks that one can adopt and which have been adopted. First, all analysts agree that at the surface level, the integrity of VC complements is considerably reduced compared with extraposition complements. This immediately raises the question of whether this ‘clause union effect’ is the result of some transformational process(es), or whether it is already reflected in the underlying structure. Approaches exploring the latter possibility can be found, *inter alia*, in Reape (1993) for HPSG and in Bresnan et al. (1982) for LFG.

There is, of course, considerable micro-variation in this domain, in particular as regards the ordering of the verbal elements in the cluster. And often, different orders can coexist within one and the same individual grammar. Representational ways of thinking about such word order variation patterns are being developed in the framework of Optimality Theoretical Syntax. Some early ideas can be found in

Abraham (1995:180f.). For more recent work, see Schmid and Vogel (2002) and Seiler (to appear).

The more standard derivational approach is to assume that VC-complements originate as bi- (or multi-) clausal constructions to which something happens in the course of the syntactic derivation. Most proposals suggest that the verb cluster is formed by adjoining the verbs to one another (as in Evers 1975). If we assume that adjunction may be both to the left and to the right of the matrix verb, different word order patterns can be derived. An alternative, suggested in Haegeman and van Riemsdijk (1986) is that the verbs are joined by means of reanalysis, which results in multidimensional tree structures in which the mono- and the biclausal nature of VC constructions is simultaneously represented. A consequence of the reanalysis approach is that the ordering variation observed in verb clusters must be the result of a separate rule or principle such as PF-inversion. Williams' contribution to the present volume introduces a theory that is close in spirit, though not in details, to this reanalysis view. At its core is the language CAT, which defines a space which limits the orders in which morphological elements may appear. This theory is too liberal in that, for each particular language, more orders are permitted by the theory than are actually instantiated. Hence the theory must be supplemented by ordering restrictions.

Another conception which has been proposed recently for Hungarian and Dutch in Koopman and Szabolcsi (2000) is to assume that while it is the verbs that are affected, what really moves is the phrases containing those verbs. This approach must be seen as part of a program that attempts to eliminate head movement altogether. See Section 3.3 for an extensive summary and discussion of this work.

A final tack that must be mentioned is to say that, essentially, Verb Raising does not exist. This line of reasoning takes scrambling, a pervasive phenomenon in the Germanic languages under scrutiny, as its point of departure. The idea is that all VC structures of the Dutch type originate as extraposed structures with extensive scrambling of the non-verbal elements out of the complement clause to positions preceding the matrix verb. If all phrases are so scrambled, the Verb Raising Pattern results. If some phrasal constituents remain behind, the resulting structures correspond to the Verb Projection Raising pattern as found in Swiss German and West Flemish. This type of approach rests heavily on the observation that there is a 'third construction', a mixed pattern accepted by some but not all speakers in which long scrambling or clitic movement out of extraposed complements appears to be possible (but see Broekman 1995, for an opposing view); (13b) and (14b) would be acceptable as third construction variants. This line of thinking originates with den Besten and Rutten (1989) and den Besten and Broekhuis (1989), followed by den Besten and Broekhuis (1992), Coppen and Klein (1992) and Broekhuis (1993). It should be noted that this work (all of which is unfortunately in Dutch) antedates Kayne's (1994) antisymmetry proposals, but it feeds

right into such a framework. Further developments of these ideas can be found in den Dikken (1996), and Zwart (1997).

Bobaljik's contribution to the present volume presents a more detailed overview and discussion of the various theoretical approaches to verb cluster phenomena.

3. The view from Hungarian

3.1 Is there a cluster? Three types of infinitival constructions

Hungarian, unlike the Germanic languages, is an agglutinating language, in which the lexical verb is combined with temporal and modal suffixes rather than auxiliaries. (Most Hungarian grammars do not even mention the category 'auxiliary', but Kenesei (2001) argues on the basis of morphological, syntactic, and semantic criteria that there is a small class of Hungarian auxiliaries, consisting of *fog* 'will', *szokott* 'used to...', and *talál* 'happens to...'. These verbs have no infinitival forms, hence they can only occur as the highest element in a verbal complex. On the other hand, their infinitival complement is not 'bare'; the head of a Hungarian Infinitive Phrase always bears the *-ni* infinitive suffix.) Despite the lack of a system of auxiliaries, Hungarian has a great variety of infinitival constructions, which display different combinations of mono- and biclausal properties. Compare:

- (26) a. *János utál valakit fel hívni telefonon.*
 John hates someone-ACC up call-INF phone-on
 'John hates to call up someone by phone.'
 b. *János utálja Marit fel hívni telefonon.*
 John hates Mary-ACC up call-INF phone-on
 'John hates to call up Mary by phone.'
- (27) *János fel fogja akarni hívni Marit telefonon.*
 John up will want-INF call-INF Mary-ACC phone.on
 'John will want to call up Mary by phone.'
- (28) *János aligha fogja Marit fel hívni akarni.*
 John hardly will Mary-ACC up call-INF want-INF
 'John will hardly want to call up Mary.'

As will be discussed more in detail below, the patterns illustrated in (26)–(28) instantiate various degrees of cohesion, with (26) being closest to a biclausal construction, and (28) representing a monoclausal structure. The relations among the verbal elements also vary accordingly; whereas the matrix verb and the infinitive in

(26) appear to be independent in certain relevant respects, the infinitival elements of (28) appear to function as a complex word.

3.1.1 The loose verbal complex

In construction (26) the embedded infinitival projection, consisting of a VP dominated by an AspP, can also be further extended by the same types of sentential operators as a finite VP, i.e., it can be subsumed by a NegP, a F(ocus)P, a DistP, and a TopP. Apart from the fact that it cannot be dominated by a visible CP projection, the infinitival phrase can have the same type of left periphery as a finite embedded sentence. Compare:

- (29) a. *János utál* [_{NegP} *nem feküdni*_i [_{AspP} *le t_i* [_{VP} *t_i idejében*]]]
 John hates not lie-INF down in.time
 ‘John hates not to go to sleep in time.’
 b. *János utál* [_{FocP} *csak 100 Ft-ot dobni*_i [_{AspP} *be t_i* [_{VP} *t_i a perselybe*]]]
 John hates only 100 forints-ACC throw-INF in the
 purse-in
 ‘John hates to throw only 100 forints into the alms-box.’
 c. *János utál* [_{TopP} *valakit* [_{DistP} *többször is* [_{AspP} *meg kérni*_i [_{VP} *t_i valamire*]]]
 John hates someone-ACC several times PRT ask-INF
 something-for
 ‘John hates to ask someone for something several times.’

In the presence of an appropriate matrix verb, the filler of the embedded focus position can also be a *wh*-phrase:

- (30) *János nem tudott* [_{FocP} *kiket hívni*_i [_{AspP} *meg t_i* [_{VP} *t_i*]]]
 John not knew who-PL-ACC invite-INF PRT
 ‘John did not know who to invite.’

The only relevant difference between finite and non-finite extended verb projections is that whereas the sentence negating particle and the focus must be adjacent to the finite verb, i.e., in a framework initiated by Bródy (1990), the negative particle and the focus attract the finite verb across the preverbal particle sitting in SpecAspP, this is not obligatory in the case of an infinitive. That is, (29a, b) and (30) also have the following variants:

- (31) a. *János utál* [_{NegP} *nem* [_{AspP} *le feküdni*_i [_{VP} *t_i idejében*]]]
 b. *János utál* [_{FocP} *csak 100 Ft-ot* [_{AspP} *be dobni*_i [_{VP} *t_i a perselybe*]]]
 c. *János nem tudott* [_{FocP} *kiket* [_{AspP} *meg hívni*_i [_{VP} *t_i*]]]

The presence of sentential operator projections above the infinitive phrase is seen as evidence of the biclausal nature of the construction. Nevertheless, even this least coherent type of infinitival construction displays monoclausal properties as well: the matrix verb agrees in definiteness with the object of the infinitive. This is evident in (26), where the *utál* ‘hates’ of (26a) does not, the *utálja* of (26b), on the other hand, does bear the *-ja* suffix indicating the presence of a definite object. As discussed in detail by den Dikken in the present volume, the matrix verb also displays person agreement with the object of the infinitive – which is most transparent in the case of a 2nd person object (involving object clitic climbing according to den Dikken):

- (32) *Utál-l-ak hallgatni titeket, amikor ilyeneket beszéltek.*
 hate-2-1SG listen-INF you-PL-ACC when such-ACC speak-2PL
 ‘I hate to listen to you when you speak such things.’

At the same time, it is not the case that every type of matrix verb taking an infinitive phrase agrees with the object of its infinitive. For example, *jár* ‘go regularly’ (which can also participate in the tight inverse order infinitival construction illustrated in (28)) is incapable of definiteness and person agreement with the object of its infinitive in the construction under consideration:

- (33) a. *Járok Pétert látogatni.*
 go-I Peter-ACC visit-INF
 ‘I [habitually] go to visit Peter.’
 b. *Járok egy beteget látogatni.*
 go-I a sick-ACC visit-INF
 ‘I [habitually] go to visit a sick person.’
 c. *Járok titeket látogatni.*
 go-I you-PL-ACC visit-INF
 ‘I [habitually] go to visit you.’

The lack of object agreement is not a morphological deficiency (as pointed out in den Dikken’s paper, *jár* does tolerate a definite object agreement suffix – cf. *járom az utat* ‘I walk the street-ACC’). The difference between (32) and (33) appears to be syntactic; the infinitive phrase in (33) is not an argument of *jár*, and therefore, perhaps, no AgrOP is projected in the matrix cycle.

The biclausal analysis of construction (26) is not supported by the flexible word order of the construction, either. The arguments of the matrix verb and the embedded verb can freely mingle, and only some of the word order variants can be accounted for in a biclausal framework. Compare:

- (34) a. [_{TopP} *Én* [_{FocP} *Jánossal_i* *utálok* [_{InfP} *vitatkozni t_i*] *a legjobban*]]
 I John-with hate argue-INF the most
 ‘It is John I hate to argue with the most.’
 b. [_{TopP} *Jánossal_i*; [_{TopP} *én* [_{NegP} *nem utálok* [_{InfP} *vitatkozni t_i*]]]]
 John-with I not hate argue-INF
 ‘With John, I don’t hate to argue.’
- (35) a. *Miért utál* [_{FocP} *csak 100 Ft* *borravalót* [_{InfP} *adni t_i*]] *János*
 why hates only 100 forint tip-ACC give-INF John
egy pincérnek_i?
 a waiter-DAT
 ‘Why does John hate to give only a 100 forint tip to a waiter?’
 b. *Miért utál egy pincérnek_i János* [_{FocP} *csak 100 Ft*
 why hates a waiter-DAT John only 100 forint
borravalót [_{InfP} *adni t_i*]]?
 tip-ACC give-INF
 ‘Why does John hate to give only a 100 forint tip to a waiter?’

The embedded arguments preceding the finite verb in (34a, b) occupy operator positions, whereas the embedded argument following a matrix argument in post-infinitive position in (35a) can be derived by extraposition. What cannot be derived in a biclausal framework is the ‘matrix V, embedded argument, matrix argument, embedded focus, embedded V’ order in (35b).

The licensing of negative universal pronouns can also be used as a test of mono- versus biclausal structure. Universal/existential pronouns participating in negation have a *se-* ‘no-’ morpheme in place of the universal *minden-* ‘every’ or existential *vala-* ‘some’ morpheme in a monoclausal context. If the universal/existential pronoun is separated from the negative particle by a clausal boundary, the *se*-pronoun is not licit anymore:

- (36) a. *János nem látott semmit.*
 John not saw nothing-ACC
 ‘John didn’t see anything.’
 b. **János nem hiszem, hogy látott semmit.*
 John not believe-I that saw nothing-ACC
 ‘I don’t believe that John saw anything.’

This test shows the infinitival construction in question to be monoclausal: matrix negation can license a *se*-pronoun in post-infinitive position:

- (37) *János csak gyerekkorában nem utált megérinteni semmilyen*
 John only childhood-his-in not hated touch-INF no
állatot.

animal-ACC

‘It was only in his childhood that John did not hate to touch any animal.’

The interesting array of mono- and biclausal properties displayed by the construction illustrated in (26) and (29)–(37) is discussed in den Dikken’s paper in this volume. He claims that definiteness agreement arises via feature movement, whereas person agreement arises via overt clitic movement into the closest AgrO domain. The weak level of ‘clause union’ attested is a consequence of AgrO being generated only upstairs.

3.1.2 *The straight order verbal complex (Particle-climbing)*

The most remarkable feature of pattern (27) is the so-called particle (or in different terminologies: preverb, verbal prefix, or verb modifier/VM) climbing, i.e., the movement of the particle selected by the lowest infinitive in front of the finite verb, according to most authors of this volume into the specifier of an AspP dominating the matrix VP.

The answer to the question whether particle climbing is to be analyzed as cyclic phrasal movement, or local head movement, or a combination of them depends, in part, on whether the infinitival construction is seen as mono- or biclausal. A significant fact in this respect is that in a particle climbing construction, the infinitive phrases cannot be subsumed by a NegP or a FocP; in other words, an intervening negative particle or focus blocks particle movement:

- (38) a. *János fel szeretné hívni Marit.*
 John up would.like call-INF Mary-ACC
 ‘John would like to call up Mary.’
 b. **János fel szeretné **nem** hívni Marit.*
 John up would.like not call-INF Mary
 c. **János fel szeretné CSAK Marit hívni.*
 John up would.like only Mary-ACC call-INF
- (39) a. *János fel fogja akarni hívni Marit.*
 John up will want-INF call-INF Mary-ACC
 ‘John will want to call up Mary.’
 b. **János fel fogja akarni **nem** hívni Marit.*
 John up will want-INF not call-INF Mary-ACC
 c. **János fel fogja **nem** akarni hívni Marit.*
 John up will not want-INF call-INF Mary-ACC

In the correct versions of (38b, c), the particle remains in the extended infinitive phrase, presumably in the specifier of an AspP. Recall that movement into Neg/F is optional for non-finite verbs, hence these sentences have two alternatives – which are nondistinct from the loose infinitival complex discussed in 3.1.1:

- (40) a. *János szeretné* [_{NegP} *nem* [_{AspP} *fel hívni Marit*]]
 John would.like not up call-INF Mary-ACC
 ‘John would like not to call up Mary.’
 a'. *János szeretné* [_{NegP} *nem hívni_i* [_{AspP} *fel t_i* [_{VP} *t_i Marit*]]]
 b. *János szeretné* [_{FocP} *csak Marit* [_{AspP} *fel hívni*]]
 John would.like only Mary-ACC up call-INF
 ‘John would like to call up only Mary.’
 b'. *János szeretné* [_{FocP} *csak Marit hívni_i* [_{AspP} *fel t_i* [_{VP} *t_i*]]]

The ungrammatical sentences in (39b, c), on the other hand, cannot be corrected so simply, by keeping the particle in the infinitival domain. If the matrix verb of these sentences (which happens to be the auxiliary *fog* ‘will’) is not preceded by a raised verbal prefix, it must be preceded by a focus or by a negative particle. (Several papers in this volume, among them Szendrői, É. Kiss, Csirmaz, and Olsvay, deduce this fact from a constraint forbidding that an auxiliary bear phrasal stress.)

- (41) a. * [_{TopP} *János* [_{VP} *fogja* [_{NegP} *nem akarni* [_{AspP} *fel hívni Marit*]]]]]
 John will not want-INF up call-INF
 Mary-ACC
 ‘John will not want to call up Mary.’
 b. [_{TopP} *János* [_{NegP} *nem fogja* [_{VP} *akarni* [_{AspP} *fel hívni Marit*]]]]]
 John not will want-INF up call-INF
 Mary-ACC

It is only an intervening focus or negative particle that blocks particle climbing; an intervening adjunct or argument does not (see (42a, b, c)). Even a stressed, wide scope distributive quantifier can appear between two verbal elements (see (42d)). Notice, however, that stressed distributive quantifiers surfacing anywhere behind the finite verb are claimed (e.g. by É. Kiss 2002) to occupy the specifier of a matrix Spec,DistP at S-structure, and to be postposed only in PF.

- (42) a. *János fel fogja akarni holnap hívni Marit.*
 John up will want-INF tomorrow call-INF Mary-ACC
 ‘John will want to call up Mary tomorrow.’
 b. *János fel fogja akarni Marit holnap hívni.*
 c. *Holnap fel fogja akarni János hívni Marit.*

- d. *Holnap fel fogja akarni 'mindenki hívni Marit.*
 tomorrow up will want-INF everybody call-INF Mary-ACC
 'Tomorrow everybody will want to call up Mary.'

In addition to the fact that the infinitival phrase(s) cannot be extended by clausal operators into a NegP and/or a FocP, the particle climbing construction has further monoclausal properties. Thus no matter if a sentence adverbial appears in the local domain of the matrix verb or in that of an infinitive, it will have the same matrix scope. Thus the following sentences have identical meanings:

- (43) a. *János fel fogja akarni újra hívni Marit.*
 John up will want-INF again call-INF Mary-ACC
 'John will want to call up Mary again.'
 b. *János fel fogja újra akarni hívni Marit.*
 c. *János újra fel fogja akarni hívni Marit.*

Interestingly, if no particle climbing takes place, the same adverbials have scope only over the verbal projection which they c-command. Thus the following variants, unlike those in (43), differ in meaning:

- (44) a. *János nem fogja akarni újra fel hívni Marit.*
 John not will want-INF again up call-INF Mary-ACC
 'John will not want to call up Mary again.'
 b. *János nem fogja újra akarni fel hívni Marit.*
 'John will not want again to call up Mary.'
 c. *János újra nem fogja akarni fel hívni Marit.*
 'John again will not want to call up Mary.'

Definiteness agreement and person agreement between the finite verb and the object of the lowest infinitive, which takes place also in the less integrated infinitival construction illustrated in (26), is also operative in the case of particle climbing across transitive auxiliaries:

- (45) a. *Fel fog-l-ak akarni hívni titeket.*
 up will-2-1SG want-INF call-INF you-PL-ACC
 'I will want to call you up.'
 b. *Fel fog-om akarni hívni Jánost.*
 up will-DEF.1SG want-INF call-INF John
 'I will want to call up John.'
 c. *Fel fogok akarni hívni valakit.*
 up will-INDEF.1SG want-INF call-INF someone
 'I will want to call up someone.'

As Tóth (this volume) points out, impersonal modals such as *kell* ‘need’ and *szabad* ‘may’ do not agree with the object of their infinitive:

- (46) *Jánosnak meg kell hívnia Pétert / egy fiút / téged.*
 John-DAT PRT needs invite-INF-3SG Peter / a boy / you-ACC
 ‘It is necessary for Peter to invite Peter/a boy/you.’

The lack of object agreement, similarly to the lack of agreement between the verb *jár* and the object of its infinitive in (33), may be related to the fact that *kell* ‘is necessary’ is intransitive in this construction (the infinitive phrase is not its syntactic object), hence it projects no AgrOP.

The particle climbing construction – like its Dutch counterpart – can involve more than one infinitive. Since in Hungarian the finite verb and the infinitives can be separated by intervening adjuncts and arguments, it is not immediately clear if the verbal elements themselves form a verb cluster – as happens in Dutch. There is a single – but powerful – piece of evidence that argues for the presence of a verb cluster. Recall that Hungarian word order is generally fairly flexible; material from the matrix and the embedded domains can mingle even in the loosely integrated infinitival construction illustrated in (26). Recall, for example, (35b), which displays the order ... V_1 XP_2 XP_1 V_2 ... In the construction under examination, on the other hand, the order of the finite verb and the infinitives is strictly determined: if the highest verb is V_1 , the head of its complement is V_2 , the head of the complement of V_2 is V_3 , and so on, then the surface order of verbal elements is V_1 , V_2 , V_3 , V_4 ... (This order corresponds to the order of verbal elements in the English sentence: that is why this pattern is referred to in several papers as ‘the English order’. In the present context, it would actually be more appropriate to call it the Dutch order.) Observe a much-discussed example (going back to Koopman & Szabolcsi 2000; Kenesei 1989):

- (47) *János szét fogja akarni kezdeni szedni a rádiót.*
 John apart will want-INF begin-INF take-INF the radio-ACC
 ‘John will want to begin to take apart the radio.’

A change in the order of verbal elements brings about a change in interpretation. Thus (48) below is also interpreted as a sentence with a V_1 , V_2 , V_3 , V_4 order, with V_3 (*akarni* ‘want’) functioning as a complement of V_2 (*kezdeni* ‘begin’):

- (48) *János szét fogja kezdeni akarni szedni a rádiót.*
 ‘John will begin to want to take apart the radio.’

Further word order variants, too, can be derived by the focussing of an infinitive – however, these variants do not involve any particle climbing:

- (49) *A végén János AKARNI fogja kezdeni szét szedni a rádiót.*
 the end-in John want-INF will begin-INF apart take-INF the
 radio-ACC
 ‘In the end, John will WANT to begin to take apart the radio.’

Thus the word order facts surveyed support the assumption that the verbal elements of the particle climbing construction represent a type of verb cluster, similar to its Dutch counterpart. The variants in which the elements of the verb cluster are separated by arguments and adjuncts, on the other hand, are reminiscent of the output of verb projection raising in West-Flemish and Swiss German – *mutatis mutandis*. (In Hungarian the subject has also been claimed to be internal to the VP (cf. É. Kiss 1987) – so it is not surprising that it can also appear between the stacked verbal elements.)

3.1.3 *The inverse order verbal complex (The roll-up construction)*

The infinitival pattern in (28) is the most coherent one of those illustrated in (26)–(28). The order of its verbal elements is remarkably different from the orders attested in patterns (26) and (27). The order of the infinitives is reversed, i.e., in the case of a four-verb complex, we get the order $V_1 V_4 V_3 V_2$. For example:

- (50) *Csak János fog úszni tanulni akarni.*
 only John will swim-INF learn-INF want-INF
 ‘Only John will want to learn to swim.’

If the lexical verb also has a particle, the particle will precede the lexical verb, i.e., the order will be $V_1 \text{PRT } V_4 V_3 V_2$:

- (51) *Csak János fogja szét szedni kezdeni akarni a rádiót.*
 only John will apart take-INF begin-INF want-INF the radio-ACC
 ‘Only John will want to begin to take apart the radio.’

The reverse-order section of this type of verbal complex behaves in certain respects as a compound word, namely, it has a single stress on its left edge, and it does not tolerate any intervening material. (The finite and the non-finite sections of the verbal complex, on the other hand, need not be adjacent.)

- (52) a. *Csak János fog úszni akarni tanulni.*
 only John will swim-INF want-INF learn-INF
 ‘Only John will want to learn to swim.’
 b. **Csak János fog úszni jövőre akarni tanulni.*
 only John will swim-INF next.year want-INF learn-INF

- c. **Csak János fog úszni akarni jövőre tanulni.*
 d. cf. *Csak János fog jövőre úszni akarni tanulni.*

As Bartos (this volume) points out, the reverse order verbal complex (unlike the straight order verbal complex) can also serve as input to certain derivational processes:

- (53) a. *Az [[énekelni tanulni akar]-ás] dicséretes dolog.*
 the sing-INF learn-INF want-ing commendable thing
 ‘Wanting to learn to sing is a commendable thing.’
 b. **az akar-ás énekelni tanulni*
 c. *egy [[énekelni tanulni akar]-ó] fiú*
 a sing-INF learn-INF want-ing boy
 ‘a boy wanting to learn to sing’
 d. **egy akar-ó énekelni tanulni fiú*

So as to account for the word-like properties of the reverse order infinitive complex, the majority of the papers of this volume derive it by cyclic head movement. In the case of (51), for example, the particle is incorporated into the lexical verb, V_4 , then $[\text{PRT } V_4]$ is incorporated into V_3 , and finally $[[\text{PRT } V_4] V_3]$ is incorporated into V_2 . This process of cyclic incorporation is referred to in several papers by the metaphor ‘roll-up’. Others call this pattern the German-order verb cluster, given that it mimics the V_1 (PRT) V_4 V_3 V_2 order attested in German infinitival constructions, e.g.:

- (54) *dass er hätte herein kommen wollen können*
 that he had in come want can
 ‘that he could have wanted to come in’

The compound-like reverse order section of this construction is, naturally, seen as a verb cluster by most authors. The reverse order need not extend over the whole non-finite section of the verbal complex, i.e., the order V_1 V_5 V_4 V_3 V_2 also has the variants V_1 V_2 V_5 V_4 V_3 , and V_1 V_2 V_3 V_5 V_4 . Since only the reverse order section of the verbal complex is impenetrable, in the partially reversed variants adjuncts and arguments can appear at more than one point:

- (55) a. *János nem fog (jövőre) akarni (jövőre) úszni*
 John not will next.year want-INF next.year swim-INF
 tanulni kezdeni.
 learn-INF begin-INF

- b. *János nem fog (jövőre) akarni (jövőre) kezdeni*
 John not will next.year want-INF next.year begin-INF
(jövőre) úszni tanulni.
 next.year swim-INF learn-INF

Such a partial roll-up is also possible in German:

- (56) *dass er hätte können herein kommen wollen*

In the Hungarian examples examined so far, the finite verb (the auxiliary *fog* ‘will’) is always preceded either by a focus or by a negative particle, because an auxiliary verb is barred from the leftmost, stressed position of the matrix VP, the position where sentence stress is assigned. However, if we replace it with a verb that can bear phrasal stress, then no matrix focus or negation is necessary for the reverse order verbal complex to be licensed:

- (57) a. *János szeretne [úszni tanulni kezdeni]*
 John would.like swim-INF learn-INF begin-INF
 ‘John would like to begin to learn to swim.’
 b. *János szeretné [szét szedni kezdeni a rádiót]*
 John would.like apart take-INF begin-INF the radio-ACC
 ‘John would like to begin to take apart the radio.’

The infinitival construction with an inverse section displays none of the biclausal properties attested in straight order infinitival constructions without particle climbing. The order of verbal elements is fixed (cyclic incorporation always begins with the bottom element of the verbal complex, and it cannot skip any of the verbal elements). Furthermore, none of the elements in the inverse section can be preceded by a focus or a negative particle:

- (58) **Csak János fog úszni tanulni nem kezdeni.*
 only John will swim-INF learn-INF not begin-INF

Matrix negation in the scope of focus, naturally, can licence a *se*-pronoun among the complements of the lowest infinitive:

- (59) *Csak JÁNOS nem fog szét szedni tudni semmit.*
 only John not will apart take-INF can-INF nothing
 ‘Only John will not be able to take apart anything.’

Adverbial scope cannot extend over part of the inverse order verb cluster, thus (60a, b) are synonymous, with the adverb taking scope over the whole non-finite section of the sentence. In (60c), on the other hand, the scope of the adverb extends over the whole sentence:

- (60) a. *János szeretné újra szét szedni kezdeni a rádiót.*
 John would.like again apart take-INF begin-INF the radio-ACC
 'John would like again to begin to take apart the radio.'
- b. *?János szeretné szét szedni kezdeni újra a rádiót.*
- c. *János újra szeretné szét szedni kezdeni a rádiót.*

In view of these facts, the inverse order verbal complex is the most tightly knit of all types of Hungarian infinitival constructions. It definitely involves a verb cluster, which also displays certain word-like properties.

3.2 The verbs that cluster

The verbs participating in verb clusters in Hungarian are largely identical with those in Dutch and German – and they also coincide to a significant extent e.g. with the verbs triggering clitic climbing in Italian (cf. Roberts 1997). Their coincidence must have a semantic basis – it is these verbs that do not necessarily express a separate event, but merely denote a modal or temporal aspect of an event expressed by a lexical verb. Thus Hungarian clustering verbs can be grouped into the same categories as their Germanic counterparts:

Auxiliaries: *fog* 'will', *szokott* 'used to', *talál* 'happen to'

Modal verbs: *kell* '(deontic and epistemic) need', *szabad* '(deontic and epistemic) may', *tetszik* 'please', *tud* 'can', *akar* 'want'

Causative-permissive verbs: *hagy* 'let', *enged* 'let', *küld* 'send', *hív* 'call'

Perception verbs: *lát* 'see', *hall* 'hear'

Aspectual verbs: *kezd* 'begin', *jön* 'come', *megy* 'go', *jár* 'go habitually'

Optional triggers (semi-modals, i.e., lexical verbs with a modal meaning component): *szeretne* 'would like', *szándékozik* 'intend', *óhajt* 'wish', *próbál* 'try', *sikerül* 'succeed'

The two types of verb clusters discussed in 3.1.2 and 3.1.3 above accept only subsets of this set of verbs (cf. Kálmán et al. 1989). The verbs which can participate in a straight order verbal complex with particle climbing include the auxiliaries, the modal verbs, the aspectual *kezd* 'begin', and the semi-modals. The auxiliaries can only function as the highest, finite elements of such a verb complex – as their infinitival form either cannot be computed, or is not used:

- (61) a. **János meg akarja fogni tanulni a verset.*
 John PRT wants will-INF learn-INF the poem-ACC
- b. *János meg fogja akarni tanulni a verset.*
 John PRT will want-INF learn-INF the poem-ACC
 'John will want to learn the poem.'

The verbs categorized above as auxiliaries and modals cannot occupy the initial position of an extended verb projection – presumably for phonological reasons (see the discussion of (41a, b) above), hence unless they are preceded by a stressed negative particle or a focus, or they are focussed themselves, they require particle climbing.

- (62) a. *János meg fog/szokott érkezni idejében.*
 John PRT will/used.to arrive in.time
 ‘John will arrive/usually arrives in time.’
 b. [_{TopP} *János* [_{VP} **fog/?szokott meg érkezni idejében*]]
- (63) a. *Be kell/szabad mutatkoznom?*
 PRT needs/allowed introduce-REFL-INF-1SG
 ‘Is it necessary/allowed for me to introduce myself?’
 b. **Kell/?szabad be mutatkoznom?*

In the case of the aspectual *kezd* and the semi-modals, on the other hand, particle climbing is optional in a straight order verbal complex without focus and negation:

- (64) a. *János szét szeretné/?kezdte szedni a faliórát.*
 John apart would.like/began take-INF the clock-ACC
 ‘John would like/began to take apart the clock.’
 b. *János szeretné/kezdte szét szedni a faliórát.*

An interesting question barely touched upon in this volume (except in Tóth’s paper) is how impersonal auxiliaries/modals selecting an inflected infinitive with a dative subject combine with personal auxiliaries and (semi-)modals selecting a non-inflected infinitive. Apparently, mixed clusters are possible, but the impersonal modal must be either the highest verb, or the second highest verb preceded by *fog* ‘will’, which functions as a raising verb in this case. In (65a) the impersonal *fog* and *kell* need no subject, and the inflected infinitive has the dative *Jánosnak* as its subject:

- (65) a. *Jánosnak meg fog kelleni tanulnia angolul.*
 John-DAT PRT will need-INF learn-INF-3SG English
 ‘It will be necessary for John to learn English.’
 b. **János(nak) meg szeretne kelleni tanulni(a) angolul.*
 John-(DAT) PRT would.like need-INF learn-INF(-3SG) English

The inverse order verb cluster, consisting only of infinitives, can be selected by any finite verb allowing an infinitival complement. In fact, it can also be licensed in the subject position of nominal or adjectival predicates:

- (66) a. *ʔJános fél szét szedni kezdeni próbálni a faliórát.*
 John fears apart take-INF begin-INF try-INF the clock-ACC
 'John is afraid to try to begin to take apart the clock.'
- b. *ʔJános utálná szét szedni kezdeni próbálni a faliórát.*
 John would.hate apart take-INF begin-INF try-INF the clock-ACC
 'John would hate to try to begin to take apart the clock.'
- (67) *Szét szedni kezdeni próbálni a faliórát veszélyes dolog.*
 apart take-INF begin-INF try-INF the clock-ACC dangerous thing
 'It is a dangerous thing to try to begin to take apart the clock.'

The set of verbs that can participate in an inverse order verb cluster is much wider than the set of verbs participating in a particle climbing construction; e.g. it includes also the habitual *jár* 'go habitually', as well as the causative-permissive *hagy* 'let', *enged* 'let', *hív* 'call', *küld* 'send', and the perception verbs *lát* 'see' and *hall* 'hear':

- (68) a. *Én soha nem fogok tangózni tanulni járni akarni.*
 I never not will tango-INF learn-INF go-INF want-inf
 'I will never want to go to learn to tango.'
- b. *Én soha nem fogom Pétert tangózni tanulni küldeni akarni.*
 I never not will Peter-ACC tango-INF learn-INF send-INF want-INF
 'I will never want to send Peter to learn to tango.'
- c. *Nem célszerű Pétert autót vezetni engedni.*
 not expedient Peter-ACC car-ACC drive-INF let-inf
 'It is not expedient to let Peter drive a car.'
- d. *Jánost szeretném angolul beszélni hallani.*
 John-ACC I.would.like English speak-INF hear-inf
 'I would like to hear John speak English.'

At the same time, it is not the case that all verbs selecting an infinitive can participate as non-lexical (i.e., non-lowest) verbal elements in this type of inverse order infinitive cluster. In addition to auxiliaries, which have no infinitive form (69a), particle verbs, or such stative verbs as *fél*, *utál*, *imád*, for example, cannot be 'rolled up' in this way, either (69b, c).

- (69) a. **Nem célszerű szét szedni kezdeni fogni a faliórát.*
 not expedient apart take-INF begin-INF will-INF the clock-ACC
 'It is not expedient to begin (in the future) to take apart the clock.'

- b. **Nem érdemes tangózni meg tanulni akarni.*
 not worth tango-INF PRT learn-INF want-INF
 'It is not worthwhile to want to learn to tango.'
- c. ??*Én soha nem fogok tangózni tanulni utálni.*
 I never not will tango-INF learn-INF hate-INF
 'I will never hate to learn to tango.'

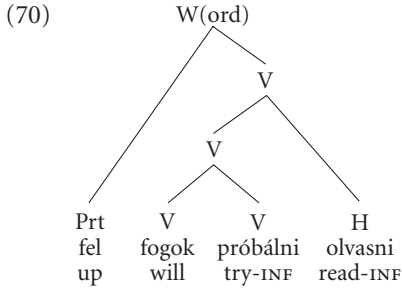
The restrictions illustrated in (69b, c) are presumably motivated by the lexical semantics of the verbs involved – a conjecture to be confirmed by future research.

3.3 Analyzing verb clusters

Hungarian sentences containing an infinitive were traditionally analyzed as monoclausal structures. The fact that Hungarian infinitival constructions in fact simultaneously display both biclausal and monoclausal properties was first discussed by É. Kiss (1987), who proposed a Haegeman and van Riemsdijk (1986) style analysis involving a dual structure. The study only examined two-member verb clusters, therefore it did not detect the existence of a reverse order verb cluster. (Since the reversal does not affect the finite verb, the existence of a reverse order cluster becomes evident only in clusters consisting of 3 or more infinitives.)

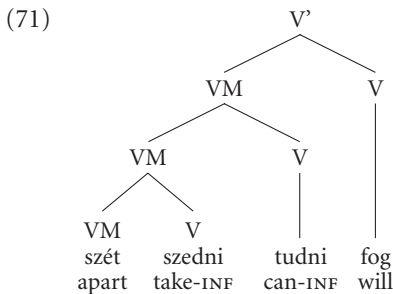
The empirical facts concerning particle climbing were first described in great detail in two papers by György Kálmán, László Kálmán, Ádám Nádasdy, and Gábor Prósztéký (Kálmán et al. 1989, 1986). They surveyed all the possible word order templates involving an infinitive and a particle associated with it, and also listed the verbs that require, allow, or reject particle climbing out of their infinitival complement.

Farkas and Sadock (1989) proposed an analysis of particle climbing in the autolexical framework of Sadock (1991). In this theory, the autonomous components of grammar independently assign structural descriptions to natural language expressions, and the different structural descriptions representing an expression need not be congruent. This is what we attest in the case of verb clusters displaying particle climbing, as well. The syntactic phrase [_V PRT V] is analyzed as a single meaning unit on the lexicosemantic level, and a single word on the morphological level. Furthermore, a finite verb and the head of its subcategorized non-finite complement can also form a single compound verb morphologically. Hence what appears to be particle climbing in syntax is a compound verb consisting of a particle and a compound stem in morphology:



In the context of a focus or negation, where the particle follows the finite verb, the VP is assumed to have a [+INV] syntactic feature. The elements of a VP_[+INV] are subject to a Particle Liberation Metarule, which breaks up the morphological word formed from them.

The inverted verb cluster, more precisely, the existence of two opposing word order variants of Hungarian infinitival constructions, was first reported on in a paper by Kenesei (1989). He considered the left-branching, right-headed verbal complex as primary, in which each infinitive acts as the verb modifier of the next higher V:

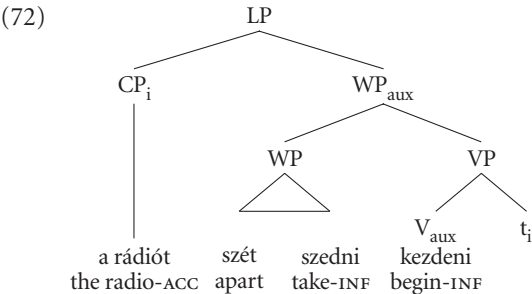


The straight order verb cluster is derived by rightward V movement from under the VM nodes, which is motivated by the requirement that the verb modifier be morphologically simple. The reverse order complex arises by the postponing of the whole material in VM, a move independently needed in the context of focus and negation.

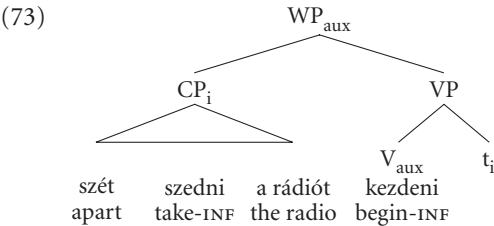
Anna Szabolcsi (1996) saw the problem of providing a unified syntactic account of the two types of Hungarian verb clusters as a *sine qua non* of assigning an appropriate syntactic structure to the Hungarian sentence. Her syntactic investigations of verb clusters evolved into a book written jointly with Hilda Koopman (Koopman & Szabolcsi 2000). The book adopts the framework of Kayne's overt syntax theory (Kayne 1998) in which all movement is overt, and all movement is phrasal. What appears to be head adjunction to a head is the movement of a rem-

nant phrase into specifier position, with everything but the head removed. (The head's dependents move to licensing positions, i.e., to Spec,LPs.) In this theory, all types of verbal complexes, whether displaying a straight order with or without particle climbing, or an inverted order, are derived by the same processes.

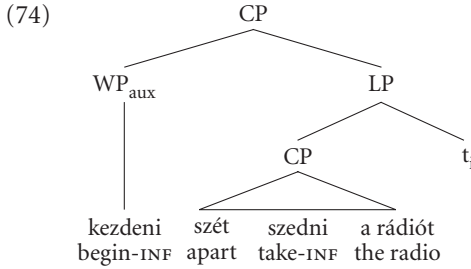
The inversion of the base-generated V1 V2 V3 V4 order is driven by two lexical requirements, namely: (i) VMs must raise to the specifier of a WP projection dominating finite and infinitival VPs alike. (ii) Auxiliary verbs need a WP in their own Spec,WP. This can happen in two ways: the infinitival WP moves up on its own, or it pied pipes its own CP. Inverted orders come about in the former case. The remnant CP moves into an outer licensing position, as follows:



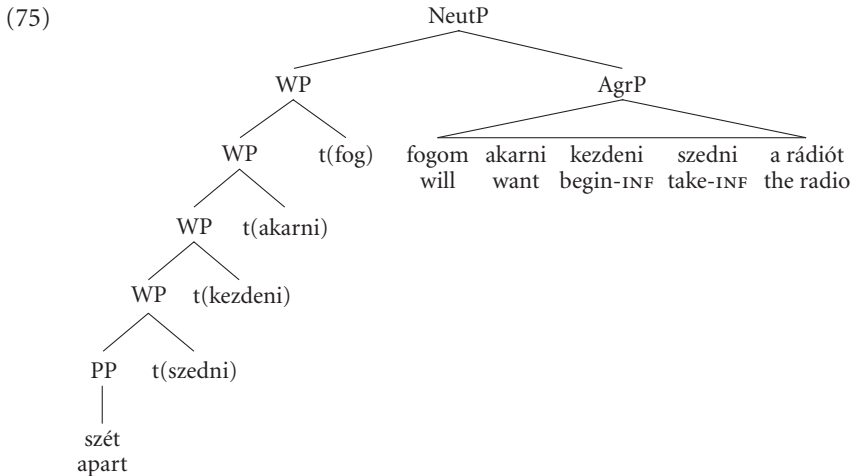
The distinctive characteristic of straight order complexes in the context of a focus or negation is that WP moves to a high position (Spec,CP) within its own clause, and pied pipes the whole clause to Spec,WP_{aux}. That is:



As a next step, CP needs to move up to get licensed in Spec,LP. Any further movement of the remnant WP_{aux} yields the straight order verbal complex:



The tensed clause of neutral sentences contains a further projection, NeutP. It is licensed by a WP that contains a single VM or a single V. This requirement triggers successive VP movement out of WP – yielding a particle climbing effect. That is:



The theory of Koopman and Szabolcsi, which is also extended to Dutch verb clusters, is based on an extensive empirical investigation of Hungarian data. It can account for a much wider range of facts than previous analyses. The authors of the present volume, nevertheless, felt motivated to formulate alternative theories because, on the one hand, the Koopman–Szabolcsi theory does not explain the differences in the syntactic properties of the straight and inverted verb clusters (e.g. the obligatory adjacency of the non-finite elements in the inverted complex, or the ability of the inverted order to serve as input to morphological derivation). On the other hand, various authors of the present volume wanted to replace the unmotivated movements assumed by Koopman and Szabolcsi by last resort operations triggered by phonological or semantic requirements.

4. Outlook

The papers of this volume present a wide range of new facts concerning West Germanic and Hungarian verbal complexes, which have gone unnoticed in the literature so far. Some of the papers introduce and test new morphosyntactic theories, demonstrating how they can cope with the task of describing verb clusters; and a study compares the predictive force of existing theories. Whether in a novel or in an established framework, the studies propose new analyses of verb cluster formation, identifying new triggers, new constraints, and new structures. The employment of analyses elaborated on the basis of West Germanic facts to Hungarian verb clusters and vice versa also leads to interesting new insights.

Part I of the book, entitled 'Data and theories', provides the empirical and theoretical background to the subsequent specific analyses of verb cluster phenomena. The first two papers, by Susi Wurmbrand and by Kriszta Szendrői and Ildikó Tóth, report the results of detailed empirical surveys of verb clustering in West Germanic and Hungarian, respectively. The papers set forth data collected and analyzed by sociolinguistic methods.

Susi Wurmbrand summarizes the results of an extensive empirical study concerning the existence, the use, and the degree of acceptability of the different variants of verb clusters across the West Germanic language area. Her investigations have revealed not only great interdialectal differences, but also surprisingly great internal variation in all dialects. She has also found a great deal of variation – both free variation and variation linked to various verb types – within the idiolects of individual speakers. The Hungarian data collected by Szendrői and Tóth are uniform across dialects, but display ample intrapersonal variation and uncertainty of judgment. The data of Wurmbrand and those of Szendrői and Tóth represent a challenge not only to linguists working on West Germanic and Hungarian verb clusters, but also to generative theory as such, which is not well prepared to handle either free variants or uncertain grammaticality judgments.

Part I of the book also includes three papers considering various theoretical tools of describing and explaining verb cluster phenomena. Jonathan David Bobaljik's paper compares the different theoretical frameworks of analyzing verb clustering adopted in the literature and in the studies of this volume. He classifies verb cluster theories on the basis of the following three parameters: (i) how they construct the verbal complex – whether they base-generate it, or derive it by means of reanalysis or movement; (ii) in which module of grammar they handle arbitrary variation – whether in syntax or in phonology; and (iii) what role they attribute to linear relations such as adjacency – i.e., how the account for the obligatory adjacency of the verbal elements in a left-branching verbal complex. Bobaljik identifies three major types of approaches. The 'inheritance' approach base-generates a complex verb, which inherits the subcategorization properties of its non-head element.

This approach to Germanic verb clusters goes back to a study by Steedman (1985) in the framework of Categorical Grammar, and a specific variant of it is instantiated by Williams' CAT theory, presented in this volume. A second family of theories is called the 'reanalysis' theory, which derives complex verbs in syntax at a late stage that does not feed semantic interpretation. This is the approach of Haegeman and van Riemsdijk (1986), also adopted by Wurmbrand (2001), and some of the authors of the present volume, including Wurmbrand and Ackema. A third family of theories is the 'movement' approach, deriving complex verbs in narrow syntax. This approach originated in Evers (1975), and a radically new version of it has evolved in the framework of the Antisymmetry Theory of Kayne (1994) – cf. Zwart (1996), den Dikken (1996), and Koopman and Szabolcsi (2000). The papers by Bródy, Alberti, and Olsvay in this volume are closest to this family of theories. Of the three types of approaches, Bobaljik judges the reanalysis approach the best, because of its handling the arbitrariness of variation typical of verb clustering.

Michael Bródy and Edwin Williams pursue primarily theoretical goals in their papers: they aim to demonstrate the power of their comprehensive morphosyntactic theories through the description of verbal complexes.

Michael Bródy's Mirror Theory, developed in Bródy (1997, 1998, 2000, and this volume), is a framework in which the head-chain type relations of standard Minimalist Theory correspond to morphological words, and in which the inner spec-head structure of a morphological word is the mirror image of the corresponding syntactic head-complement structure. In this framework, the left-headed and the right-headed variants of the Hungarian verbal complex (i.e., the Particle V1 V2 V3 V4 order, and the V1 Particle V4 V3 V2 order, respectively) represent the syntactic/phrasal and the morphological/word-size realizations of the very same construction. The theory correctly predicts the different syntactic properties of the two orders, e.g. the obligatory adjacency of the verbal elements in the right-headed complex. Bródy's analysis of the right-headed verbal complex as a morphological word is accepted by most Hungarian contributors of the volume. Bartos and É. Kiss also support this proposal with further evidence, and É. Kiss extends it to the description of the German verbal complex.

Edwin Williams's paper examines the applicability of the language called CAT to the description of West Germanic and Hungarian verb clustering. CAT, introduced and explored as a model of verbal inflection in Williams (2003), defines in what ways morpheme order can vary in natural languages, and what orders are impossible in all languages. It includes a combinatorial rule, which ensures that a morpheme complex inherit the subcategorization properties of the non-head. The language also contains an operation called FLIP, reversing the linear order of two adjacent constituents, as well as a rule called REASSOCIATE, changing the bracketing of constituents under appropriate conditions. As Williams demonstrates, in the case of, say, a four-member verb cluster, the language generates precisely the orders

V1 V2 V3 V4, V1 V2 V4 V3, V1 V3 V2 V4, and V3 V1 V2 V4, which are attested in some dialect or other, and excludes the unattested orders *V3 V1 V4 V2, and *V2 V4 V1 V3. (As is clear from Wurmbrand's paper, however, not all theoretically possible word order variants can be found in all the West Germanic languages and language variants. This means that CAT has to be supplemented with further constraints to account for the specific ordering restrictions of the various dialects.)

Part II of the volume, entitled 'Forces and factors', offers various descriptions of verb cluster phenomena, adopting different assumptions about the trigger of verb clustering, about the elements participating in verb clusters (e.g. about the head versus phrasal nature of the verbal particle), about the left- or right-headedness of the structures underlying verb clusters, and about the role of morphology in verb clustering.

Kriszta Szendrői's paper discusses particle climbing in Hungarian, resulting in a Particle V1 V2 V3 V4 verb cluster, and claims that it is phonologically triggered: it is a last resort movement which serves to avoid the stressing of a stress-avoiding verb. (Stress-avoidance is a lexical property of a set of verbs, disallowing main stress falling on them.) Particle climbing is analyzed as phrasal movement taking place in narrow syntax (given that it observes island constraints). The claim that particle climbing in Hungarian is triggered by the inability of (semi-)lexical verbs to bear main stress, is also adopted by other authors of this volume, e.g. by Csirmaz, Olsvay, and É. Kiss. On the other hand, it is unclear if this approach can be directly applied to West Germanic. Notice that although Hungarian and Dutch particle climbing can yield the same surface string, Dutch particle climbing is always optional, whereas Hungarian particle climbing is obligatory in certain contexts, and impossible in others.

In Dutch, verbal particles are known to occur in two varieties: as heads and as phrases. The former incorporate into the verbal head, whereas the latter occupy the specifier position of a PredP projection. Anikó Csirmaz examines the question whether this might also be the case in Hungarian. In Hungarian it has been debated if verbal particles move as heads or as phrases, but it has mostly been taken for granted that they only contain head material (for a different view, see Koopman & Szabolcsi 2000). Phrasal preverbal constituents have been analyzed as foci. As Csirmaz demonstrates, certain types of verbs do have a designated phrasal complement canonically appearing in the preverbal position which fails all the focus tests, and shares the relevant properties of verb modifying particles, and which, therefore, must be a phrasal verb modifier. Csirmaz claims that all verb modifiers move to Spec,PredP, and those constituted by a mere head incorporate into the V raised to Pred. She demonstrates that the mysterious class of Hungarian 'stress-avoiding' verbs consists precisely of the verbs which have a designated phrasal complement acting as a verb modifier. She assimilates the set of 'stress-avoiding verbs' to the

set of auxiliaries, calling them phonologically defective verbs (cf. Szendrői's theory reviewed above), which are lexically incapable of bearing phrasal stress.

According to Gábor Alberti's paper, verbal complex formation in Hungarian is motivated by aspect. The aspect of the Hungarian verb phrase or infinitive phrase is claimed to be determined by a designated argument of the head, called an 'aspectualizer', which is raised to the Specifier of an AspP projection dominating VP/InfP. In non-telic sentences the V itself serves as its own aspectualizer. Verbs participating in clustering assign the 'aspectualizer' feature to their infinitive phrase complement, which itself also contains an AspP shell harboring an aspectualizer. Owing to a phonological constraint, requiring that the filler of Spec,AspP contain no more phonological material than a head, the movement of an infinitive phrase to Spec,AspP must be preceded by extraposition. Consequently, in the case of the multiple embedding of infinitive phrases, what moves up to the matrix Spec,AspP is the aspectualizer of the lowest V, i.e., the particle in most cases, yielding a Particle V1 V2 V3 V4 order with a perfective meaning. The progressive alternative is expressed by a V4 V1 V2 V3 Particle order, involving a verbal aspectualizer. The so-called roll-up structure, i.e., the V1 Particle V4 V3 V2, or V1 V2 Particle V4 V3 order, is derived with the same machinery under a looser phonological constraint, requiring that an aspectualizer contain no post-head material. The syntactic operations employed in the derivations (e.g. extraposition), and the resulting complex phonological entities have different costs, and the varying grammaticality judgments of speakers are computed from the syntactic and phonological costs of the given derivation. Interspeaker variation is derived from how a speaker ranks syntactic and phonological costs – a solution reminiscent of Optimality Theory.

Csaba Olsvay analyzes Hungarian verb clusters (as well as parallel German phenomena) in the Minimalist framework, attributing a crucial role to the checking of a [+aspectual] feature. Olsvay points out delicate differences between particle movement in simple and complex, finite and non-finite, neutral and non-neutral predicates, and argues that the different types of particle movement have different triggers and different landing sites. A particle is simultaneously a head and a phrase. As a head, it can undergo incorporation – subject to a so-called 'Head Movement Constraint', forbidding the adjunction of a complex head to a finite Tense. The inverse order infinitive complex, the so-called roll-up structure, is the output of cyclic head movement. The particle has an aspectual feature, which is checked against the aspectual feature of the Tense head; this is what triggers phrasal particle movement to Spec,TP in simple predicates. In verbal complexes, the aspectual feature of the particle is checked in the lowest cycle, hence no particle climbing to the matrix Tense takes place – unless it is triggered by a phonological requirement (forbidding an auxiliary having main stress).

The papers by Katalin É. Kiss and Peter Ackema aim to provide uniform analyses of West Germanic and Hungarian verbal complexes. É. Kiss extends her VO

analysis of the Hungarian verbal complexes to Dutch and German, whereas Ackema extends his Haegeman and van Riemsdijk (1986)-style OV analysis of the Dutch and German verbal complexes to Hungarian.

In É. Kiss's analysis, verbal complex formation is triggered by an Auxiliary Constraint, according to which an auxiliary cannot represent the main assertion in a clause. In order to prevent a violation of the Auxiliary Constraint, an auxiliary must merge with a lexical verb (or with a verbal complex involving a lexical verb) either via reanalysis, or via cyclic head movement, performed on a V1 V2 V3 V4 Particle underlying structure. (This proposal with respect to Dutch and German is not new – cf. den Dikken 1996 and Zwart 1997.) Reanalysis results in the so-called straight order verbal complex (Particle V1 V2 V3 V4), whereas cyclic head movement results in the so-called roll-up structure (V1 Particle V4 V3 V2). É. Kiss presents compelling evidence against the possibility of deriving Hungarian verbal complexes from an OV base, and she also enlists several arguments against the standard Haegeman and van Riemsdijk (1986) – style derivation of the West Germanic verbal complexes from an OV base (pointing out the ad hoc nature of the PF inversion that derives the V1 V2 V3 V4 and V1 V4 V3 V2 orders from V4 V3 V2 V1, or the inability of the theory to explain the infinitive *pro participio* phenomenon).

Peter Ackema first demonstrates what difficulties the derivation of Dutch verb clusters from a VO base has to face, and why a standard Evers (1975, 2001)-type, or a Haegeman and van Riemsdijk (1986)-type derivation is more plausible, and then he extends the proposed analysis to Hungarian, accounting for every fact of Hungarian that the VO analyses have revealed and have explained. (Although so far all generative analyses of Hungarian have shared the assumption that Hungarian has a head-initial VP, typologists do tend to classify Hungarian as an OV language on the basis of various properties.) Ackema identifies extraposition versus verb raising in Hungarian, pointing out that the matrix verbs triggering one or the other construction in the two languages are largely identical. He shows that a Haegeman and van Riemsdijk-style approach is capable of accounting for a surprisingly wide range of empirical facts of Hungarian – even if it has to be supplemented with some constraints specific to Hungarian, which are ranked in an OT-like fashion.

Huba Bartos proposes a new technical device for the generation of the V1 V4 V3 V2 order verbal complex, the so-called roll-up structure in Hungarian. (His solution can also be extended to the German V1 V4 V3 V2 complex – provided it is derived from a VO base.) The framework is a model of on-line morphology elaborated by Bartos, in which each step of the syntactic derivation is followed by an appropriate step in morphology. For instance, if in syntax a stem-type category X and an affixal head Y are paired by head-adjunction, morphology places X and Y into one word domain. Bartos proposes a way of associating stems and affixes which is less costly than head-adjunction, the so-called morphosyntactic merger (the syntax-internal equivalent of the morphological merger of Halle &

Marantz 1993). Bartos suggests that auxiliary-like verbs participating as the top and intermediate members of a verbal complex can (optionally) be assigned a feature [+suffix]. If marked as [+suffix], they are subject to morphosyntactic merger, which yields a complex morphological verb in the position of the stem, i.e., after cyclic morphosyntactic merger, the verbal complex is realized in the position of the lowest element of the verbal complex. Bartos argues for this claim on the basis of evidence involving adverb placement. In order to prevent morphosyntactic merger into the finite verb, the verbal elements participating in morphosyntactic merger are required to be uniform with respect to finiteness. (This constraint can also explain the infinitive pro participio effect in German, i.e., the replacing of a participle with an infinitive in the V1 V4 V3 V2 verbal complex.)

Ildikó Tóth compares Germanic passive infinitives and the corresponding Hungarian resultative infinitives embedded under epistemic and deontic modals. She observes that whereas in German, epistemic and deontic modals can cooccur with either a personal or an impersonal passive infinitive, in Hungarian, they are grammatical only with the personal infinitive. In accounting for this difference, she arrives at a conclusion different from those of the other papers in this volume. She argues that whereas German modals appear in mono-clausal structures with no functional projections between the modal and the infinitival verb, Hungarian modals take a clausal complement, involving an IP projection at least. Hungarian modals do participate in phenomena which are analyzed in other papers of this volume as manifestations of restructuring/clause union, thus they trigger particle climbing, and they figure in roll-up structures. Tóth concludes that particle climbing cannot be a symptom of restructuring, it must involve A-bar movement into Spec,FocusP of the matrix clause. In her analysis, the so-called roll-up structure, too, is a multi-clausal construction.

Marcel den Dikken examines four types of infinitival constructions in Hungarian, and demonstrates that they differ with respect to three key parameters of clause union: (i) the structural location of Asp (triggering particle climbing), (ii) the structural location of v/Agro (triggering definiteness agreement climbing), and (iii) the presence or absence of an I head above the infinitive phrase (triggering object clitic climbing). He argues for a modular approach to clause union effects, claiming that 'clause union' is a sliding scale, defined by these three separate parameters. Auxiliary verbs like *fog* 'will' are on top of this scale, because they require particle climbing, definiteness agreement climbing and object clitic climbing alike. Causative verbs are lower on the clause union scale; they only participate in definiteness and person agreement with the embedded object. Verbs of the type *jön* 'come' are only subject to person agreement with the object of the infinitive. The degree of clause union attested is always a consequence of which functional projections are absent in the infinitival phrase. If the infinitive lacks an IP, then object clitic climbing targets the matrix I, i.e., we attest grade 3 clause union, manifested

in person agreement. If the infinitive has no AgrOP/vP of its own, either, then also object agreement takes place upstairs, between the object of the infinitive and the matrix auxiliary, yielding a grade 2 clause union. If the infinitive projects no AspP, either, then particle climbing takes place, as well, resulting in grade 1 clause union. A further interesting aspect of den Dikken's theory is the interpretation of person agreement as clitic doubling, and the analysis of clitic doubling as extraction from a possessive construction, harboring both the clitic and the full noun phrase, as the possessor and the possessum.

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PART I

Data and theories

West Germanic verb clusters

The empirical domain

Susi Wurmbrand

1. Introduction

The purpose of this paper is to present an overview of the empirical situation of West Germanic verb clusters. Looking at the distribution of possible and impossible word orders in verb cluster constructions, a phenomenon one is immediately struck by is the notable speaker, language, and dialect variation found in this area. This article attempts to summarize the observations as available at this point.

An important (and often overlooked) property of the distribution of verb clusters is the fact that languages do not display a rigid verb cluster pattern (such as ‘the highest verb precedes or follows the *n*-highest verb’), but rather word order differs with respect to the construction involved (e.g., whether the verbal elements involved are modals, auxiliaries etc.). In Section 2, I will thus consider a variety of constructions involving two and three verbal elements, and provide an overview of these constructions in Afrikaans, Dutch, Frisian, Standard German, and West Flemish. This overview will show that it is essential to make these language internal distinctions to provide an empirically adequate account of the distribution of verb clusters.

Furthermore, it has been noted that in certain languages, in particular in German, the distribution of verb clusters also shows a significant amount of speaker and dialect variation. To systematize this variation, I have conducted a questionnaire-based pilot study, and the results will be summarized in Section 3. Although the results are preliminary and further investigation is necessary, certain patterns could be detected which are important for the overall characterization of the verb cluster phenomenon.

Finally, Section 4 provides a summary of the empirical generalizations arising from the distribution of verb clusters in West Germanic. The generalizations will be stated in the framework of the analysis proposed in Haegeman and van Riemsdijk (1986).

2. West Germanic verb clusters

To put the results of the questionnaire-based study of German verb clusters to be presented in Section 3 in a broader empirical context, I will first provide a brief summary of the distribution of verb clusters in the major West Germanic languages/dialects. The languages/dialects considered in this section are: Afrikaans, Dutch, Frisian, “Standard” German, (a variety of) Swiss German, and West Flemish. Note that the notion “Standard” German does not necessarily have an actual instantiation among the German dialects. The facts attributed to “Standard” German (e.g., in prescriptive grammars) are nevertheless listed here, since these word orders appear to be possible in all (non-Swiss) German dialects (however, as we will see in Section 3, they are not necessarily the preferred options in the different dialects). Section 2.1 summarizes the word order options in verb clusters consisting of two verbal elements; Section 2.2, lists the options for verb clusters consisting of three verbal elements.

2.1 The distribution of two-verb clusters

The constructions involving verb clusters with two verbs are auxiliary-participle constructions (e.g., *John has left*) and auxiliary/modal-infinitive constructions (e.g., *John will/must leave*). Table 1 summarizes the possible word orders for two-verb clusters in a number of West Germanic languages/dialects; data illustrating these orders are provided in the Appendix.

The following three generalizations emerge from the languages investigated so far. First, the distribution of auxiliary-participle constructions does not (necessarily) coincide with the distribution of modal-infinitive constructions. In Afrikaans, Dutch (when “1” is non-finite), Swiss, and West Flemish, the orders vary with respect to the constructions involved – i.e., there is no general (“1-2” or “2-1”) word order schema for two-verb clusters in these languages. Note in particular, that in Afrikaans and West Flemish where only one order is possible in each construction, the order required in the auxiliary-participle construction is excluded in the modal-infinitive construction (and vice versa). Second, the “2-1” order is possible in all dialects for auxiliary-participle constructions. In other words, no dialect requires the “1-2” order in this construction (this is again different in the modal-infinitive construction). Third, if the “1-2” order is possible in an auxiliary-participle construction it is also possible in the modal-infinitive constructions (but not vice versa).

Given the distribution in Table 1, dialects can be grouped into five types: (i) dialects with rigid “2-1” order (German, Frisian); (ii) dialects with rigid “2-1” order in auxiliary-participle constructions, but flexible order in modal-infinitive con-

Table 1. Verb clusters with two verbal elements

Language	Auxiliary-Participle	Modal-Infinitive
Afrikaans	2-1	1-2*
Dutch (1 = finite)	1-2	1-2
	2-1	2-1
Dutch (1 = non-finite)	1-2	1-2
	2-1	
Frisian	2-1	2-1
Standard German	2-1	2-1
Swiss	2-1	2-1
		1-2
West Flemish	2-1 [†]	1-2

Notes:

* *Come* + infinitive allows the 2-1 order (Robbers 1997).

[†] 1-2 is possible if 2 is followed by an extraposed PP or CP (Haegeman 1995:53, 1998b:294).

Bibliographical notes:

Afrikaans: Robbers (1997).

Dutch: Koopman and Szabolcsi (2000) among many others.

Frisian: de Haan (1993), Zwart (1996), Ijbema (1997), Ackema (p.c.; results of a questionnaire).

German: Ijbema (1997) among many others.

Swiss: Schönenberger (1995), Haeberli (p.c.), van Riemsdijk (p.c.).

W. Flemish: Haegeman (1995, 1998b).

structions (Swiss); (iii) dialects with flexible order in both constructions (Dutch when “1” is finite); (iv) dialects with flexible order in auxiliary-participle constructions and finite modal-infinitive constructions, but rigid “1-2” order in non-finite modal-infinitive constructions (Dutch when “1” is non-finite); and (v) dialects with rigid “2-1” order in auxiliary-participle constructions and rigid “1-2” order in modal-infinitive constructions (West Flemish, Afrikaans). What appears to be unattested (at least to this end) are first, dialects that display clustering effects but only allow a “1-2” order for auxiliary-participle constructions, and second, languages that allow a flexible order for auxiliary-participle constructions but a rigid “2-1” order for modal-infinitive constructions.

2.2 The distribution of three-verb clusters

The five major types of constructions involving verb clusters with three verbal elements are: double modal constructions, two types of auxiliary-modal constructions, modal-auxiliary constructions, and double auxiliary constructions.¹ Examples are given in an abstract form in (1) (English words are used to illustrate the constructions, but of course, some of the examples would be impossible in En-

glish, since modals can only be part of a multiple verb construction when they are the highest verbal element in English). Note that “IPP” in (1b) refers to the so-called *Infinitivus Pro Participio* “infinitive for participle” effect. As illustrated in (2), Dutch modal verbs that occur in a perfective construction (i.e., under the auxiliary *have*) do not show up as participles (PART) but rather as infinitives (INF). The same effect is found in most verb cluster languages (see Section 4.1).

(1) VERB CLUSTERS WITH THREE VERBS

- a. MOD-MOD-V: *John must* (1) *can* (2) *sing* (3)
FIN (1) INF (2) INF (3)
'John must be able to sing'
- b. AUX-MOD-V: *John will* (1) *must* (2) *sing* (3)
FIN (1) INF (2) INF (3)
'John will have to sing'
John has (1) *must* (2) *sing* (3)
FIN (1) IPP (2) INF (3)
'John has had to sing'
- c. MOD-AUX-V: *John must* (1) *have* (2) *sung* (3)
John must (1) *be* (2) *elected* (3)
FIN (1) INF (2) PART (3)
- d. AUX-AUX-V: *John has* (1) *been* (2) *elected* (3)
FIN (1) PART (2) PART (3)

(2) DUTCH: INFINITIVUS PRO PARTICIPIO (IPP)

- a. *dat Jan het boek heeft kunnen lezen*
that Jan the book has (1) can-IPP (2) read (3)
'that Jan has been able to read the book'
- b. **dat Jan het boek heeft gekund lezen*
that Jan the book has (1) can-PART (2) read (3)
'that Jan has been able to read the book'

Constructions involving infinitival complements with an infinitival marker (*to*, *zu*, *te* etc.) are not considered here. As is well-known, German and Dutch show an interesting difference regarding verb clustering in these constructions. While in Dutch, verb cluster effects (such as verb raising and the IPP-effect; but see Section 4.1) are found with all verbs of the class of *restructuring verbs*, verb cluster effects in German are only attested with modals, auxiliaries, and AcI-verbs (perception verbs and causatives) and are excluded with *lexical restructuring verbs* such as *try*, *dare*, *manage* (see Wurmbrand 1999, 2001a, to appear for the distinction between *lexical* and *functional restructuring* constructions). Since the focus of this paper are verb cluster constructions in German, lexical restructuring will be set aside here.

The distribution of the constructions in (1) in the West Germanic languages and dialects considered here is given in Table 2 (for examples the reader is again referred to the Appendix).² For German and Swiss dialects see Section 3.4.

Without going into details about the distribution of verb clusters at this point (see Section 4.2), some general points should be noted. First, of the six possible combinations involving three verbal elements, five orders are indeed possible. The “2-1-3” order, on the other hand, has not been attested in any of the constructions or languages and dialects in Table 2 (it is found in extraposition contexts, however, many authors have argued that extraposition constructions display different properties and have to be distinguished from the constructions in Table 2; see for instance Rutten 1991; Robbers 1997; Wurmbrand 2001a). Furthermore, the “2-3-1” order is only found in the IPP-construction.

Second, it is evident from the distribution in Table 2, that verb cluster formation cannot be seen as a simple rule or operation that arranges verbs in multiple verb constructions according to some language specific hierarchical schema (such as “the lowest verb precedes/follows the n-highest verb”). Rather, the distribution of verbal elements is crucially dependent on the type of construction. This is most strikingly the case in West Flemish. West Flemish allows all five orders attested in verb clusters, however, the distribution of these orders is severely restricted by the type of construction: the “1-2-3” order is only possible in the double modal construction and certain IPP constructions; the “1-3-2” order is only possible in participle constructions; the “3-1-2” order is only possible in the modal-auxiliary-participle construction; the “3-2-1” order is only possible in the double auxiliary construction; and finally, the “2-3-1” order is restricted to IPP constructions. Thus, an account of the distribution of word orders in multiple verb constructions has to take into account the language-specific and construction-specific nature of this phenomenon.

Third, although the distribution in Table 2 might look overwhelming at first sight, there are generalizations that emerge both within one language as well as across languages. In particular, the word order patterns show interesting generalizations when the category of the elements involved is taken into consideration. This is most clearly the case in Dutch. Dutch verb clusters display a rigid “1-2-3” schema, with the exception that participles are free to occur anywhere in the cluster. That is, if “3” is a participle, it can occupy any position in the cluster, resulting in three possible word orders: {3}-1-{3}-2-{3}. We can also note that participles can always precede the auxiliary (with the possible exception of the passive auxiliary *worden* ‘become’ in Dutch); i.e., if “3” is a participle, the order “3...2” is possible (but not necessary) in all dialects, or in other words, there is no dialect that requires the auxiliary to precede the participle (in fact, Dutch is the only language that allows the participle to follow the auxiliary; cf. the “1-2-3” order in the modal-auxiliary-participle construction). Before turning to a more detailed dis-

Table 2. Verb clusters with three verbal elements
Notation M: Modal A: Auxiliary P: Participle
FIN: Finite INF: Infinitive IPP: Infinitive-for-participle

Language	M-M-V FIN-INF-INF	A-M-V FIN-INF-INF	A-M-V FIN-IPP-INF	M-A-V FIN-INF-P	A-A-V FIN-P-P
Afrikaans	1-2-3	1-2-3	2-3-1	1-3-2 3-1-2*	N/A
Dutch	1-2-3	1-2-3	1-2-3	1-2-3 3-1-2 1-3-2 [3-2-1]	?3-1-2 ?1-3-2 [?others]
Frisian	3-2-1	3-2-1	3-2-1 [1-2-3] [†]	3-2-1	3-2-1
Standard German	3-2-1	3-2-1 1-3-2	1-3-2	3-2-1	3-2-1
West Flemish	1-2-3		1-2-3 [‡] 2-3-1 [‡]	1-3-2 3-1-2	3-2-1 1-3-2

Notes:
[...] orders that are attested but very restricted in the language for which they are listed and could not be verified; these orders will not be considered as possible orders for these languages here, but they are listed in the table to indicate that a further refinement and dialect separation is necessary.
* “3-1-2” is only possible when “2” is a passive auxiliary.
† IPP is not obligatory; some speakers do not use IPP; “1-2-3” is mentioned in Ijbema (1997), Hoekstra and Taanman (1996) for certain constructions (perception verbs and aspectual auxiliaries) in West Frisian.
‡ “1-2-3” is obligatory when the auxiliary is in the past or has a negative marker attached.
“2-3-1” is obligatory when the auxiliary is non-finite.

Bibliographical notes:

Afrikaans: The double auxiliary construction is not used in Afrikaans (Conradie, p.c.)
Dutch: The “1-3-2” and “3-2-1” orders for the M-A-V construction are mentioned in Zwart (1996), Ijbema (1997), and Robbers (1997); the authors note variation among Dutch speakers; the “3-2-1” order is possible in certain Dutch dialects (but very marked). Double participle constructions involving *geworden* are generally considered marginal; for double participle constructions involving *get* + PART (i.e., ‘has gotten PART’), the “1-3-2” order is mentioned in Robbers (1997:124).
Frisian: Quoted from de Haan (1993), Zwart (1996), Ijbema (1997); confirmed by Peter Ackema (p.c.)
German: e.g., Ijbema (1997).
W. Flemish: Haegeman (1988–1998).

cussion of the generalizations regarding the distribution of verb clusters in the languages/dialects mentioned, I will present the results of the pilot study testing word order variation in German.

3. Questionnaire-based study of German verb clusters³

3.1 Outline of the questionnaire

The questionnaire (see Appendix) was distributed as a written questionnaire. It includes a general section (asking for basic information about the consultant's dialect) and three linguistic sections. I used two types of questions which I will refer to as *fill-in* and *multiple choice* questions. In fill-in questions (cf. (3a)), a context and a partial sentence were provided; the task was to complete the sentence using all and only the words listed. The consultants were asked to write down the sentence in the order that comes to their mind first or that they find best. In multiple choice questions (cf. (3b)), consultants were asked to evaluate sentences using three criteria (however, it was also stated explicitly that additional categories could be used if the ones provided are not sufficient): "Yes, I would say this sentence in exactly this way", "No, I would never use this sentence", "Maybe, I could imagine that somebody would say this sentence, but it is not how I would usually say it".

(3) FILL-IN AND MULTIPLE CHOICE QUESTIONS

- a. Er glaubt,
[aufklären/nicht/den Mord/dass/kann/er]
He thinks [solve/not/the murder/that/can/he]
- b.
- | | Yes | No | Maybe |
|--|--------------------------|--------------------------|--------------------------|
| <i>Ich frage mich, warum er den Fall nicht</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I ask myself, why he case not
<i>hat lösen können</i> | | | |
| has solve can | | | |

Question 1 and the first part of Question 3 were fill-in questions; Question 2 and the second part of Questions 3 were multiple choice questions (details about the questions will be presented in Section 3.4).

3.2 Goal and scope of the questionnaire

In an earlier study Hsiao (1999) has noted that German dialects fall into various subgroups concerning the word orders found in the IPP constructions (cf. (4)). While all speakers seem to accept (though not necessarily prefer) the order “1-3-2”

in (4)a, there is significant variation concerning the orders “3-1-2”, “3-2-1”, and “1-2-3” (cf. (4b, c, d) respectively). Hsiao’s study has shown that many speakers accept more than one word order in (4) and that different speakers have different preferences regarding which combination of orders they accept. Swiss speakers for instance prefer (4d) (some also accept (4a) and (4b)), Austrians accept (and many prefer; cf. Patocka 1997) (4b) and/or (4c). What appears to be unattested are speakers that accept (4c) and (4d). The result of Hsiao’s study is that there are six sub-grammars for sentences like (4) (i.e., six different combinations of orders accepted by different speakers).

(4) GERMAN: INFINITIVUS PRO PARTICIPIO (IPP)

- a. *weil er ihr hätte helfen müssen*
since he her had (1) help (3) must-IPP (2)
- b. %*weil er ihr helfen hätte müssen*
since he her help (3) had (1) must-IPP (2)
- c. %*weil er ihr helfen müssen hätte*
since he her help (3) must-IPP (2) had (1)
- d. %*weil er ihr hätte müssen helfen*
since he her had (1) must-IPP (2) help (3)

Hsiao’s study concentrates on the IPP construction and does not test other three-verb clusters or two verb clusters. Since the situation is quite different in non-IPP constructions (see below), we will see that it is essential for an account of German verb clusters to capture and incorporate the generalizations arising in all types of verb clusters. While all of the orders in (4) are attested and documented for some dialect (in the IPP constructions), there is no systematic study of what orders a particular speaker or speaker group allows in other three-verb clusters. In particular, there is no study comparing what orders a speaker who accepts orders other than the “standard” orders for one construction accepts for other constructions. The goal of the questionnaire I developed thus was to establish a complete characterization of verb clusters in German dialects. The constructions tested are summarized in Table 3. The two-verb clusters include an auxiliary-participle construction and two modal-infinitive constructions; the three-verb clusters include constructions with an infinitive and a participle, IPP constructions, constructions with two infinitives, and constructions with two participles.

3.3 Consultants

The results presented here are from a total of 88 questionnaires. The majority are speakers from Germany (56); 27 speakers are from Austria; and 5 speakers are from Switzerland. Although the number of Swiss speakers is too low to draw any conclu-

sions, I will include the numbers here for completeness. I will also list the results of the questionnaires I received from speakers from Vorarlberg (the Westernmost province of Austria) separately from the results of other Austrian speakers, since these speakers belong to the Alemannic dialect group.⁴

3.4 Summary of results

3.4.1 Question 1

Question 1 targeted the two and three verb clusters of Table 3 (see Table 4.1 for a list of constructions). The objective of the first question (which was a *fill-in* question) was to determine what the most unmarked word orders for the constructions under consideration are and to provide a basic control for the questions to follow. Speakers were asked to order the words of a sentence in the order(s) they preferred (note that multiple answers were possible and encouraged). As is shown in Table 4.2, the answers provided by the German and Austrian speakers (excluding speakers from Vorarlberg [VLBG] correspond mostly to the “Standard” orders; the only construction which yielded more than one answer was the double modal construction.⁵ Note, however, that none of the speakers (6 Germans, one Austrian) who gave the “1-3-2” order for *muss lösen können* ‘must solve can’ fully accepted this order later-on in Question 3 for *muss schwimmen können* ‘must swim can’ (only some

Table 3. Constructions tested

1	2	3	4	Examples: ((4)-3)-2-1	Gloss
AUX FIN	V PART			<i>gesehen hat</i>	seen has
MOD FIN	V INF			<i>lösen kann</i> <i>lösen soll</i>	solve can solve shall/should
MOD FIN	AUX INF	V PART		<i>gesehen haben kann</i> <i>repariert haben muss</i> <i>gelöst werden muss</i>	seen have can repaired have must solved be must
AUX FIN	MOD IPP	V INF		<i>lösen können hat</i>	solve can has
MOD FIN	MOD INF	V INF		<i>lösen können wird</i> <i>schwimmen können muss</i>	solve can will swim can must
AUX FIN	AUX PART?	V PART		<i>gelöst worden ist</i>	solved been is
AUX FIN	MOD IPP	MOD INF	V INF	<i>lösen können sollen hätte</i>	solve can shall had
AUX FIN	AUX INF	MOD IPP	V INF	<i>ausgehen dürfen haben wird</i>	go-out may have will

Table 4.1. Constructions tested in Question 1 (excluding the IPP-construction)

Examples: (3)-2-1	1	2	3	“Standard German (SG)”
<i>gesehen hat</i> seen has	AUX FIN	V PART		2-1
<i>lösen kann</i> solve can	MOD FIN	V INF		2-1
<i>gesehen haben kann</i> seen have can	MOD FIN	AUX INF	V PART	3-2-1
<i>gelöst werden muss</i> solved be must	MOD FIN	AUX INF	V PART	3-2-1
<i>lösen können muss</i> solve can must	MOD FIN	MOD INF	V INF	3-2-1
<i>gelöst worden ist</i> solved been is	AUX FIN	AUX PART?	V PART	3-2-1

of these speakers judged it with “?”). Speakers from Vorarlberg also provided the “Standard” orders, however, in addition, several other combinations were noted for some of the modal constructions. Finally, as is known from the works on Swiss German (see for instance Haegeman & van Riemsdijk 1986; Schönenberger 1995; Hsiao 1999), Swiss German displays a relative freedom of word orders in verb clusters. This claim is clearly confirmed by the pilot study. As is illustrated in Table 4.2, the Swiss speakers note several options for all constructions (including in fact one instance of a “2-1-3” order; however, since the number of speakers is very low, it remains to be determined whether this order is an error or indeed possible in certain Swiss dialects). Note in particular that one speaker also contributes the “1-2” order for the auxiliary-participle construction. As mentioned in Table 1, this order is generally excluded in Swiss German for this construction, however it has been pointed out by Schönenberger (p.c.) and Hsiao (1999, p.c.) that this order is attested in certain Swiss dialects. The answers provided by the Swiss speakers could hence be seen as support for this dialect split.

Turning now to the IPP-construction, the answers provided by the consultants are summarized in Table 5. German and Austrian speakers again predominantly noted the “Standard 1-3-2” order, however, in addition, also provided the orders “3-1-2” and “3-2-1” (in particular, almost a third of the Austrian speakers wrote down the “3-2-1” order which is often claimed to be ungrammatical in the IPP construction). The most interesting result are the answers provided by the speakers from Vorarlberg: only less than half of these speakers noted the “Standard” order, but all speakers noted the “3-1-2” order. Finally, Swiss speakers provided four options, and, in particular, these speakers favor the “1-2-3” order which is impossible (or highly marked) in all other German dialects.

Table 4.2. Answers to Question 1 (excluding the IPP-construction)

Notation x/n: x = number of speakers that gave this order; n = total number of speakers of this group

Examples: (3)-2-1	SG	Germans	Austrians	VLBG	Swiss
<i>gesehen hat</i> seen has	2-1	2-1	2-1	2-1	2-1 (5/5) 1-2 (1/5)
<i>lösen kann</i> solve can	2-1	2-1	2-1	2-1	2-1 (4/5) 1-2 (4/5)
<i>gesehen haben kann</i> seen have can	3-2-1	3-2-1	3-2-1	3-2-1	3-2-1 (3/5) 1-3-2 (4/5) 3-1-2 (3/5) 2-1-3 (1/5)
<i>gelöst werden muss</i> solved be must	3-2-1	3-2-1	3-2-1	3-2-1 (7/7) 1-3-2 (2/7)	3-2-1 (4/5) 1-3-2 (4/5) 3-1-2 (3/5)
<i>lösen können muss</i> swim can must	3-2-1	3-2-1 (53/56) 1-3-2 (6/56)	3-2-1 (18/20) 1-3-2 (1/20)	3-2-1 (6/7) 1-3-2 (2/7) 1-2-3 (1/7)	3-2-1 (3/5) 1-3-2 (4/5) 1-2-3 (4/5) 3-1-2 (3/5)
<i>gelöst worden ist</i> solved been is	3-2-1	3-2-1	3-2-1	3-2-1	3-2-1 (5/5) 1-3-2 (1/5) 3-1-2 (1/5)

Table 5. Answers to Question 1 – IPP construction

Notation #: number of answers

%/a: percent of the number of answers

%/s: percent of the number of speakers

IPP	Order	Germans			Austrians			VLBG			Swiss		
		#	%/a	%/s	#	%/a	%/s	#	%/a	%/s	#	%/a	%/s
<i>hat können lösen</i> has can-IPP solve	1-2-3	0	0	0	0	0	0	1	8.3	14.3	4	36.4	80.0
<i>hat lösen können</i> has solve can-IPP	1-3-2	54	87.1	96.4	16	64.0	80.0	3	25.0	42.9	3	27.3	60.0
<i>lösen hat können</i> solve has can-IPP	3-1-2	3	4.8	5.4	3	12.0	15.0	7	58.3	100.0	3	27.3	60.0
<i>lösen können hat</i> solve can-IPP has	3-2-1	5	8.1	8.9	6	24.0	30.0	1	8.3	14.3	1	9.1	20.0

Table 6. Constructions tested in Question 2

Construction	Order	Example	Gloss	SG
MOD-INF	1-2	<i>kann lösen</i>	can solve	*
		<i>soll lösen</i>	shall/should solve	*
MOD-AUX-V (FIN-INF-PART)	1-2-3	<i>kann haben gesehen</i>	can have seen	*
	1-3-2	<i>kann gesehen haben</i>	can seen have	*
		<i>muss repariert haben</i>	must repaired have	*
	3-1-2	<i>gesehen kann haben</i>	seen can have	*
	3-2-1	<i>gesehen haben kann</i>	seen have can	OK
AUX-MOD-V (FIN-IPP-INF)	1-2-3	<i>hat können lösen</i>	has can solve	*
	1-3-2	<i>hat lösen können</i>	has solve can	OK
	3-1-2	<i>lösen hat können</i>	solve has can	*
	3-2-1	<i>lösen können hat</i>	solve can has	*
	2-3-1	<i>können lösen hat</i>	can solve has	*
	2-1-3	<i>können hat lösen</i>	can has solve	*
				*
MOD-MOD-V (FIN-INF-INF)	1-2-3	<i>wird können lösen</i>	will can solve	*
	1-3-2	<i>muss schwimmen können</i>	must swim can	*
		<i>wird lösen können</i>	will solve can	OK
	3-1-2	<i>lösen wird können</i>	solve will can	*
AUX-AUX-V (FIN-PART-PART)	3-2-1	<i>lösen können wird</i>	solve can will	OK
	1-2-3	<i>ist worden gelöst</i>	is been solved	*
	1-3-2	<i>ist gelöst worden</i>	is solved been	*
		<i>gelöst ist worden</i>	solved is been	*

3.4.2 Question 2

Question 2 was a multiple choice question; the constructions tested are listed in Table 6.

The answers are summarized in Table 7 and Table 8 (the highlighted rows are the orders that are considered to be the “Standard” orders). Let us start with the two-verb clusters tested. As expected, the “1-2” order is rejected by all dialect groups except the Swiss speakers. The rejection rate is highest for speakers from Germany (87.5–92.9%), and slightly lower for Austrians (75–85%) and speakers from Vorarlberg (71.4–83.3%). In contrast, all Swiss speakers accept this order.⁶

Turning to the distribution of three verb clusters we find that there is one construction – the double auxiliary construction (see the bottom of the tables) – which displays uniform judgments across dialects. That is, in all dialects (including Swiss) the “1-2-3”, “1-3-2”, and “3-1-2” orders, which are attested in various other constructions, are clearly rejected in this construction. The rejection rate is lowest for the “1-3-2” order in Swiss (66.7%), however, since the number of Swiss speakers who participated in the study is very low, the significance of this fact cannot be evaluated at this point. Furthermore, the distribution of modal-auxiliary constructions is fairly uniform among German and Austrian speakers. The only order

Table 7. Answers to Question 2 (percentages) – Germans, Austrians

Percentages of answers			Germans			Austrians		
Construction	Order	Example	YES	NO	?	YES	NO	?
MOD-V	1-2	<i>kann lösen</i>	1.8	87.5	10.7	5.0	85.0	10.0
‘can/shall solve’	1-2	<i>soll lösen</i>	0.0	92.9	7.1	0.0	75.0	25.0
MOD-AUX-V	1-2-3	<i>kann haben gesehen</i>	0.0	96.4	3.6	0.0	100.0	0.0
FIN-INF-PART	1-3-2	<i>kann gesehen haben</i>	1.8	83.9	14.3	5.0	75.0	20.0
‘can have seen’	1-3-2	<i>muss repariert haben</i>	1.9	88.7	9.4	0.0	90.9	9.1
	3-1-2	<i>gesehen kann haben</i>	16.1	82.1	1.8	5.0	85.0	10.0
	3-2-1	<i>gesehen haben kann</i>	94.6	3.6	1.8	95.0	0.0	5.0
AUX-MOD-V	1-2-3	<i>hat können lösen</i>	16.1	58.9	25.0	25.0	55.0	20.0
FIN-IPP-INF	1-3-2	<i>hat lösen können</i>	87.5	0.0	12.5	85.0	5.0	10.0
‘has can solve’	3-1-2	<i>lösen hat können</i>	17.9	26.8	55.4	65.0	5.0	30.0
	3-2-1	<i>lösen können hat</i>	25.9	34.8	39.3	45.0	30.0	25.0
	2-3-1	<i>können lösen hat</i>	1.8	83.0	15.2	0.0	80.0	20.0
	2-1-3	<i>können hat lösen</i>	0.0	92.9	7.1	0.0	85.0	15.0
MOD-MOD-V	1-2-3	<i>wird können lösen</i>	5.4	85.7	8.9	0.0	80.0	20.0
FIN-INF-INF	1-3-2	<i>muss schwimmen können</i>	0.0	81.1	18.9	9.1	36.4	54.5
‘must can swim’	1-3-2	<i>wird lösen können</i>	54.5	1.8	43.6	60.0	0.0	40.0
‘will can solve’	3-1-2	<i>lösen wird können</i>	3.6	50.0	46.4	35.0	20.0	45.0
	3-2-1	<i>lösen können wird</i>	83.9	5.4	10.7	78.9	10.5	10.5
AUX-AUX-V	1-2-3	<i>ist worden gelöst</i>	1.8	98.2	0.0	0.0	100.0	0.0
FIN-PART-PART	1-3-2	<i>ist gelöst worden</i>	0.0	94.6	5.4	0.0	85.0	15.0
‘is been solved’	3-1-2	<i>gelöst ist worden</i>	5.5	92.7	1.8	10.0	90.0	0.0

accepted in this construction is the “Standard 3-2-1” order; all other orders tested are clearly rejected in these dialect groups (rejection rates are between 75–100%). Thus, although the “1-3-2” order is noted for the modal-auxiliary construction in the literature (see for instance, Zwart 1996), the results of the present study do not support this claim (only a very small subset of the German and Austrian speakers accept this word order). Regarding the distribution of this construction in Swiss and Vorarlberg dialects, however, the situation is not as clear cut. While the “1-2-3” order is noticeably rejected by all speaker groups, the other orders are partly accepted. Speakers from Vorarlberg, like other German speakers, reject the “3-1-2” order, however, these speakers are less convinced about the impossibility of the “1-3-2” order (the rejection rate is 57.1% for the active construction *kann gesehen haben* ‘can seen have’, and only 40% for the passive construction *muss repariert haben* ‘must repaired have’). Finally, Swiss contrasts with the other dialects in that both the “1-3-2” and the “3-1-2” orders are acceptable, however, the “Standard 3-2-1” order shows some clear variation (50% yes, 50% no). As before, it is impossible to draw any conclusion from this fact, however, the variation can be seen

Table 8. Answers to Question 2 (percentages) – Vorarlberg, Swiss

Percentages of answers			Vorarlberg			Swiss		
Construction	Order	Example	YES	NO	?	YES	NO	?
MOD-V	1-2	<i>kann lösen</i>	0.0	83.3	16.7	100	0.0	0.0
‘can/shall solve’	1-2	<i>soll lösen</i>	0.0	71.4	28.6	100	0.0	0.0
MOD-AUX-V	1-2-3	<i>kann haben gesehen</i>	0.0	100	0.0	0.0	100	0.0
FIN-INF-PART	1-3-2	<i>kann gesehen haben</i>	14.3	57.1	28.6	100	0.0	0.0
‘can have seen’	1-3-2	<i>muss repariert haben</i>	0.0	40.0	60.0	75.0	25.0	0.0
	3-1-2	<i>gesehen kann haben</i>	0.0	100	0.0	83.3	16.7	0.0
	3-2-1	<i>gesehen haben kann</i>	71.4	0.0	28.6	50.0	50.0	0.0
AUX-MOD-V	1-2-3	<i>hat können lösen</i>	16.7	33.3	50.0	100	0.0	0.0
FIN-IPP-INF	1-3-2	<i>hat lösen können</i>	71.4	14.3	14.3	66.7	33.3	0.0
‘has can solve’	3-1-2	<i>lösen hat können</i>	100	0.0	0.0	66.7	33.3	0.0
	3-2-1	<i>lösen können hat</i>	14.3	42.9	42.9	16.7	58.3	25.0
	2-3-1	<i>können lösen hat</i>	0.0	66.7	33.3	16.7	58.3	25.0
	2-1-3	<i>können hat lösen</i>	0.0	71.4	28.6	16.7	41.7	41.7
MOD-MOD-V	1-2-3	<i>wird können lösen</i>	0.0	57.1	42.9	75.0	0.0	25.0
FIN-INF-INF	1-3-2	<i>muss schwimmen können</i>	0.0	0.0	100	75.0	25.0	0.0
‘must can swim’	1-3-2	<i>wird lösen können</i>	42.9	0.0	57.1	75.0	25.0	0.0
‘will can solve’	3-1-2	<i>lösen wird können</i>	33.3	0.0	66.7	100.0	0.0	0.0
	3-2-1	<i>lösen können wird</i>	33.3	0.0	66.7	33.3	16.7	50.0
AUX-AUX-V	1-2-3	<i>ist worden gelöst</i>	0.0	100	0.0	0.0	100	0.0
FIN-PART-PART	1-3-2	<i>ist gelöst worden</i>	0.0	85.7	14.3	33.3	66.7	0.0
‘is been solved’	3-1-2	<i>gelöst ist worden</i>	0.0	100	0.0	16.7	83.3	0.0

as an indication of a potential dialect split, and this construction hence poses an interesting terrain for a further empirical investigation.

Turning to the IPP-construction, we can note that the “Standard 1-3-2” order is accepted in all dialect groups (with the lowest acceptance rate among Swiss speakers), and that the “2-3-1” and “2-1-3” orders are rejected by German, Austrian, and Vorarlberg speakers (although less strongly in the latter), and are also among the most dispreferred orders in Swiss German. Among the remaining orders we find both clear dialect differences and variation as well as uncertainties that do not appear to correlate with regional variation. Note first that Austrian, Vorarlberg, and Swiss speakers accept and in part even favor the “3-1-2” order (i.e., 100% of the Vorarlberg speakers accepted this order; 65% of the Austrians fully accepted it, 30% judged it as ‘maybe’, and only 5% rejected it). This fact is noteworthy since it robustly supports the observation reported by Patocka (1997) who claims that the unmarked order in Austrian German verb clusters is the “3-1-2” order. Furthermore, the rejection rate of this order is also quite low for the German dialects (27%), and the construction is considered as marginal (the ‘maybe’ category) by the majority of German speakers (i.e., 55%). Thus, the “3-1-2” order,

while not a “Standard” order, certainly cannot be ignored as an option for the IPP-construction. A clear dialect split arises regarding the “1-2-3” order. The majority of German and Austrian speakers reject this order, however the rejection rate is significantly lower than in other cases mentioned before (i.e., 59% for German, 55% for Austrian). Speakers from Vorarlberg do not accept this order, but judged it as marginal (50%) and only 33% fully rejected it. Swiss, on the other hand, shows uniform acceptance for the “1-2-3” order, which is in line with most characterizations of Swiss German in the literature.

The final order to be considered for the IPP construction is the “3-2-1” order – i.e., the basic word order of non-IPP constructions in German. In many works on verb clusters, it is claimed that this order is ungrammatical in German when the verb shows up with IPP-morphology (but grammatical when the verb occurs with participial morphology). Although – as the reader can verify – the numbers do not reflect a clear generalization, the results of the present study nevertheless show that this conclusion is too strong. With the exception of Swiss, the actual rejection rates for this order are fairly low (they range from 30 to 42.9%). However, it is also the case that most speakers do not fully accept this order (acceptance rates are 25.9% for Germans, 45% for Austrians, 14.3% for Vorarlbergians, and 16.7 for Swiss). If we consider the sum of ‘yes’ and ‘maybe’ answers together, the rates are 65.2% (Germans), 70% (Austrians), and 57.2% (Vorarlberg).⁷ Thus, the majority of all German speakers (except Swiss) at least marginally accept the “3-2-1” order. While these numbers indicate that the “3-2-1” order cannot simply be declared as ungrammatical, the significant uncertainty among speakers can also not be ignored. It is important to note that the variation regarding this order does not appear to correlate with regional differences. Among the German speakers who accept this order, for instance, are speakers from Schleswig-Holstein, Niedersachsen, Niederbayern, Hessen, Berlin, Hamburg, Bayern, Baden Württemberg, Brandenburg, Nordrhein Westfalen, and Sachsen. However, not all speakers from these areas accept this order. Similarly, the Austrian speakers who accepted the “3-1-2” order were from different dialect groups and only a subset of the speakers from each area accepted this order. Thus, the only conclusion we can draw from the study so far, is that the “3-2-1” order is an option for the IPP-construction in German and cannot simply be characterized as ungrammatical (with the possible exception of Swiss German), however, it is also clearly not a preferred option. Further investigation seems necessary and will hopefully shed light on this issue.

The last construction to discuss is the auxiliary-infinitive construction involving the future auxiliary *werden* ‘will’. The Swiss data will have to be ignored here, since – as was pointed out to me by a number of Swiss speakers – the auxiliary *werden* is not used to refer to the future but only has a modal interpretation (the exact meaning of this modal interpretation still has to be determined). For German and Austrian speakers, the preferred order in this construction (83.9% and 78.9%,

respectively) is the “3-2-1” order. However, importantly, the “1-3-2” order is also possible for the majority of speakers; the numbers are in particular indicative, as soon as the “MAYBE” answers are taken into consideration again (see Note 7): 98.1% of Germans and 100% of the Austrians accept (or at least marginally accept) this order. Furthermore, as expected, the “3-1-2” order is again fairly high for Austrian speakers (80% for the sum of “YES” and “MAYBE”). Finally, speakers from Vorarlberg do not fully accept any of the orders in this construction, but crucially, also do not reject any of the “3-2-1”, “1-3-2”, and “3-1-2” orders (note that the rejection rates for these orders are 0%).

3.4.3 Question 3

Question 3 addressed verb clusters with four verbs. Two constructions were tested (see Table 9): an auxiliary-double modal construction (i.e., a construction in which “2” is an IPP-infinitive), and a double auxiliary-modal construction (i.e., a construction in which “3” is an IPP-infinitive).

As a general comment, many speakers noted that these constructions are not used in spoken language, in particular, these complex constructions are not part of dialectal speech. As a consequence, the numbers of speakers who provided no answer or answers with less than the requested four verbs is higher in dialect areas, and the results appear more instable and diverse than for the constructions tested in Questions 1 and 2. Although I will not discuss four-verb clusters further, I include the answers to Question 3 here for completeness (for the multiple choice answers see the Appendix). As is shown in Table 10, the most common order provided for the high IPP construction in the fill-in part is the “1-4-3-2” order; Austrian speakers also noted (to a similar degree) the “1-2-4-3” order. For the low IPP construction, on the other hand, the most typical order (in all dialects) is the “1-4-2-3” order, followed by the “1-2-4-3” and “4-3-2-1” orders. Although these orders were noted in the fill-in part of Question 3, the same orders were later on rejected by a large number of speakers in the multiple choice part of this question. Thus it seems that although a general trend can certainly be observed, the facts are not strong enough at this point to draw firm conclusions about the distribution of four-verb clusters.

Table 9. Constructions tested in Question 3

Constructions	1	2	3	4	Examples: 4-3-2-1
AUX-MOD-MOD-V	FIN	IPP	INF	INF	<i>lösen können sollen hätte</i> 'solve can shall had'
AUX-AUX-MOD-V	FIN	INF	IPP	INF	<i>ausgehen dürfen haben wird</i> 'go-out may have will'

Table 10. Fill-in answers to Question 3

Construction	Order	Example	G	A	V	S
AUX-MOD-MOD-V	1-4-3-2	<i>hätte lösen können sollen</i>	47	7	2	0
FIN-IPP-INF-INF	1-4-2-3	<i>hätte lösen sollen können</i>	3	1	1	0
1-2-3-4	1-2-4-3	<i>hätte sollen lösen können</i>	4	6	3	2
'had shall can solve'	1-2-3-4	<i>hätte sollen können lösen</i>	0	0	0	3
	1-3-4-2	<i>hätte können lösen sollen</i>	1	0	0	0
	4-1-3-2	<i>lösen hätte können sollen</i>	2	3	1	0
	4-1-2-3	<i>lösen hätte sollen können</i>	1	0	0	0
	4-3-1-2	<i>lösen können hätte sollen</i>	1	2	1	0
	4-3-2-1	<i>lösen können sollen hätte</i>	1	1	0	0
	1-4-3	<i>hätte lösen können</i>	2	2	0	0
	{1}-4-{1}-2	<i>{hätte} lösen {hätte} sollen</i>	2	0	0	0
			64	22	8	5
AUX-AUX-MOD-V	1-2-4-3	<i>wird haben ausgehen dürfen</i>	11	3	0	0
FIN-INF-IPP-INF	1-2-3-4	<i>wird haben dürfen ausgehen</i>	0	0	0	1
1-2-3-4	1-4-2-3	<i>wird ausgehen haben dürfen</i>	18	9	3	1
'will have may go-out'	1-4-3-2	<i>wird ausgehen dürfen haben</i>	7	1	1	0
	1-3-4-2	<i>wird dürfen ausgehen haben</i>	0	0	1	0
	4-2-3-1	<i>ausgehen haben dürfen wird</i>	2	0	0	0
	4-3-2-1	<i>ausgehen dürfen haben wird</i>	11	3	1	0
	4-3-1-2	<i>ausgehen dürfen wird haben</i>	0	1	0	0
	4-2-1-3	<i>ausgehen haben wird dürfen</i>	0	2	0	0
	{2}-4-3-{2}	<i>{hat} ausgehen dürfen {hat}</i>	5	1	2	1
	4-3-1	<i>ausgehen dürfen wird</i>	5	0	0	0
			59	20	8	3

3.4.4 Summary of judgments (idealized)

To conclude the empirical overview, this section presents the results of Questions 1 and 2 of the questionnaire-based study in terms of idealized judgments. Table 11 summarizes the data for the four dialect groups using the following criteria: Orders that are accepted by more than 75% of the speakers of a group are listed as grammatical; orders marked as “?” are orders that are judged as “YES” or “MAYBE” by more than 75% of the speakers of a group; and finally, if the majority of speakers (i.e., 50% or more) judges an order as “YES” or “MAYBE”, it is listed as “%”.⁸

4. Empirical generalizations

In this section, I will provide an overview of the generalizations of the verb cluster patterns in West Germanic. For ease of exposition and to compare the distribution of verb clusters in the different languages/dialects, Table 12 summarizes the

Table 11. Idealized judgments

OK: 75% or higher “YES”
?: 75% or higher sum of “YES” & “MAYBE”
%: 50% or higher sum of “YES” & “MAYBE”

Construction	Example	German	Austrian	Vorarlberg	Swiss
MOD-V	<i>lösen kann/soll</i>	2-1	2-1	2-1	2-1
FIN-INF					1-2
MOD-AUX-V	<i>gesehen haben kann</i>	3-2-1	3-2-1	3-2-1	1-3-2
FIN-INF-PART				%1-3-2	3-1-2
					%3-2-1
AUX-MOD-V	<i>hat lösen können</i>	1-3-2	1-3-2	3-1-2	1-2-3
FIN-IPP-INF		?3-1-2	?3-1-2	?1-3-2	%1-3-2
		%3-2-1	%3-2-1	%1-2-3	%3-1-2
				%3-2-1	
AUX-MOD-V	<i>lösen können wird</i>	3-2-1	3-2-1	?1-3-2	N/A
FIN-INF-INF		?1-3-2	?1-3-2	?3-1-2	
		%3-1-2	?3-1-2	?3-2-1	
MOD-MOD-V*	<i>schwimmen können muss</i>	3-2-1	3-2-1	3-2-1	1-2-3
FIN-INF-INF			%1-3-2	?1-3-2	3-2-1
					%1-3-2
					%3-1-2
AUX-AUX-V	<i>gelöst worden ist</i>	3-2-1	3-2-1	3-2-1	3-2-1
FIN-PART-PART					

* The questionnaire involved only one example with a double modal construction; the distribution of this construction in the different dialects is hence not conclusive.

possible orders in three-verb clusters in the languages discussed (for adjustments and bibliographical notes see below Table 2). As mentioned, verb clusters with four verbs are ignored here, since the empirical distribution could not be robustly established and will require further investigation.

Before presenting the generalizations arising from the distribution in Table 12, I will briefly address the question of whether the verb cluster phenomenon correlates with other properties of the languages under consideration.

4.1 What are verb cluster languages?

To define the set of languages that display verb cluster phenomena, various criteria have been invoked depending on the theoretical background assumptions. The most common criterion is word order: A language is a verb cluster language if it does not display a rigid word order pattern in multiple verb constructions – i.e., if the unmarked order of verbal elements is different from the underlying order

Table 12. Verb clusters with three verbal elements

Language	M-M-V FIN-INF-INF	A-M-V FIN-INF-INF	A-M-V FIN-IPP-INF	M-A-V FIN-INF-P	A-A-V FIN-P-P
Afrikaans	1-2-3	1-2-3	2-3-1	1-3-2 3-1-2	N/A
Austrian German	3-2-1 ?/%1-3-2	3-2-1 ?1-3-2 ?3-1-2	1-3-2 ?3-1-2 %3-2-1	3-2-1	3-2-1
Dutch	1-2-3	1-2-3	1-2-3	1-2-3 3-1-2 1-3-2 [3-2-1]	?3-1-2 ?1-3-2 [?others]
Frisian	3-2-1	3-2-1	3-2-1 [1-2-3]	3-2-1	3-2-1
German dialects	3-2-1	3-2-1 ?1-3-2 %3-1-2	1-3-2 ?3-1-2 %3-2-1	3-2-1	3-2-1
Swiss	1-2-3 3-2-1 %1-3-2 %3-1-2	N/A	1-2-3 %1-3-2 %3-1-2	1-3-2 3-1-2 %3-2-1	3-2-1
Vorarlberg	3-2-1 ?1-3-2	?1-3-2 ?3-1-2 ?3-2-1	3-1-2 ?1-3-2 %1-2-3 %3-2-1	3-2-1 %1-3-2	3-2-1
West Flemish	1-2-3		1-2-3 2-3-1	1-3-2 3-1-2	3-2-1 1-3-2

in at least one construction.⁹ Languages that fall into this category (independently of whether one takes the underlying order to involve a head-final or a head-initial structure) are Afrikaans, Dutch, German, Swiss German, West Flemish (including all the dialects of these languages), as well as Hungarian. Setting aside Hungarian which differs from the other languages in many respects (see the articles in this volume), the remaining languages have all traditionally been characterized as head-final (but see Ackema this volume, for the claim that Hungarian can also be analyzed as head-final). However, the correlation between the head-final nature of these languages and verb cluster formation might also be challenged. First, apart from Hungarian, one could see Yiddish as a counterexample to the generalization that all head-initial Germanic languages display a rigid “1-2-3” order. Since Yiddish, which many researchers treat as a head-initial language, allows optional re-ordering of passive participles in multiple verb constructions (cf. den Besten & Moed van Walraven 1986), Yiddish could be classified as a head-initial verb clus-

ter language. Second, it can be debated whether all head-final Germanic languages indeed display verb cluster phenomena. Frisian, for instance, features a rigid “3-2-1” order in modal and auxiliary constructions (i.e., configurations that typically show clustering effects in other languages). Assuming an underlying OV-structure, Frisian thus would not involve any verb cluster re-ordering. If, however, the empirical domain is extended to include *te/to/zu*-infinitives, certain re-orderings are obligatory (cf. de Haan 1992, 1993, 1996), and hence Frisian would qualify as a verb cluster language, allowing to maintain the generalization that all head-final Germanic languages are verb cluster languages.

In light of more recent approaches, in particular, approaches that are based on the *Universal Base Hypothesis* (cf. Kayne 1994), the “head-initial” vs. “head-final” distinction is not a grammatical notion since all languages are considered to be organized along a head-initial schema. Hence, the generalization noted above cannot be stated by referring to the directionality setting of the base structure. Thus, in these approaches, verb cluster languages do not share a typological property but are rather defined by the overt/covert settings of various movement operations or the factors that trigger verb cluster formation itself.

As mentioned above, a further commonality of the (Germanic) verb cluster languages that has been noted in the works on verb clusters is the IPP effect. The IPP-phenomenon is found in Dutch, German, and West Flemish – i.e., languages that are also classified as verb cluster languages (i.e., as languages that allow word orders that cannot be treated as basic word orders under either a head-final or a head-initial base structure). Thus, an interesting question arising from this first generalization is whether there is a strong or weak correlation between the IPP-effect and verb cluster formation (i.e., whether it is the case that all languages displaying the IPP-effect also involve verb cluster reordering and/or whether it is the case that all languages involving clustering also display the IPP-effect). Other languages that have to be considered in this respect are Afrikaans, Frisian, and Swiss German. Note first that Afrikaans and Swiss German which are clustering languages (again independently of the base structure) appear to be irrelevant for the present issue, since these languages do not distinguish between infinitives and participles, and hence, it is not testable whether these languages display the IPP-effect (cf. Robbers 1997 for Afrikaans and Schönenberger 1995 for Swiss). Turning to Frisian, it has been noted that Frisian only permits rigid descending (i.e., “3-2-1”) orders in multiple verb constructions (except – as pointed out above – in constructions with *to*-infinitives); thus, under a head-final base structure, no re-ordering takes place in these constructions in this dialect. If the IPP-effect is only found when re-ordering takes place we would expect that Frisian should not display the IPP-effect. According to what is reported in the literature, this seems to be correct. It has been pointed out by a number of researchers (cf. for instance de Haan 1992; Hoekstra & Taanman 1996; Ijbema 1997) that Frisian lacks the IPP-effect

(in the descending order).¹⁰ Thus, we can state a one-way generalization between languages that involve verb cluster re-ordering and languages that display the IPP-effect: IPP is only found in languages that divert from the strict descending “3-2-1” order. Although this correlation appears to be quite striking and is unlikely to be accidental, it is not clear what property of grammar it targets and what its importance is. The reason is that this correlation is an indirect generalization about languages and not about a causal relationship between the properties involved (verb cluster formation and the IPP-effect). To strengthen the IPP/verb cluster correlation, it has therefore been suggested that there is in fact a direct causal relationship between the IPP-effect and verb clustering (see for instance van der Meer 1990; den Dikken 1989). This step, however, has to be taken with some caution (see Ijbema 1997 for a critical overview of this issue). First, the IPP-effect is licensed in the presence and absence of verb cluster formation. That is, it is the case that independently of what one considers to be the base structure for the languages under consideration, there are constructions displaying the IPP-effect but lacking verb cluster reordering. Assuming a head-final base structure, the possibility of the “3-2-1” order in the IPP construction for certain Austrian and German speakers would be problematic for the claim that the IPP-effect is triggered by or tied to verb cluster reordering. Assuming a head-initial base structure, on the other hand, Dutch, Swiss German, and West Flemish IPP constructions would be problematic for the claim that IPP is only licensed when reordering takes place. Thus, verb cluster reordering cannot be seen as the (sole) cause for the IPP-effect.

Second, verb cluster formation takes place in the presence and absence of the IPP-effect. As is evident from Table 12, verb cluster reordering is not restricted to a particular type of construction (such as the IPP-construction), but is found in all types of constructions. Since the fully ascending and descending orders do not necessarily involve reordering (i.e., the “1-2-3” and “3-2-1” orders could be treated as basic orders depending on whether one takes a language to follow the head-initial or head-final schema), we restrict our attention for the moment to the “1-3-2”, “3-1-2”, and “2-3-1” orders, which clearly involve some sort of reordering under both the head-final and the head-initial approach. As the table shows, at least one language displays one or more of these orders in each construction: Austrian, Vorarlberg dialects, and Swiss German in the double modal construction; all varieties of German in the auxiliary-modal construction; Afrikaans, all varieties of German, Swiss, and West Flemish in the IPP construction; Afrikaans, Dutch, Swiss, Vorarlberg dialects, and West Flemish in the modal-auxiliary-participle construction; and Dutch and West Flemish in the double participle construction. Furthermore, Ijbema (1997) also shows that there are dialects such as Achterhoeks where reordering takes place in potential IPP-constructions, however, the IPP-effect nevertheless does not occur or is optional in these constructions. Thus, the IPP-effect cannot be considered to be the cause for clustering.

Since verb cluster reordering is neither restricted to IPP-environments nor necessary in IPP-constructions, it cannot be assumed that a causal relation holds between these two properties. This point is particularly important for German. As has been observed by many researchers, the IPP-construction is special in German, since it involves obligatory reordering which contrasts with the otherwise typical “3-2-1” order in that language. However, what has often been ignored (but see Kathol 1996, 1998a, 1998b for exceptions) is that the special reordering is *not* restricted to IPP-constructions but also found in auxiliary-modal constructions in which the “auxiliary” is the future element *werden* ‘will’. Importantly, these constructions are not IPP-constructions, but involve an infinitive which is selected by the future element. Thus, the generalization regarding (Standard) German is that the “3-2-1” order is obligatory in all constructions except in auxiliary-modal constructions. Thus, the “1-3-2” order cannot be attributed to the IPP property but has to be seen as a special property of auxiliary-modal constructions. In sum, while there are interesting generalizations between verb cluster reordering and the directionality setting of a language as well as the IPP-effect, the generalizations are only one-way generalizations and direct causal relationships between these properties cannot be established.

In the next section, the generalizations regarding the distribution of verb clusters in the languages/dialects mentioned will be fleshed out. The (descriptive) generalizations will be stated in the framework of the analysis of Haegeman and van Riemsdijk (1986).

4.2 Generalizations of the inversion patterns

One of the first works that takes into account the variation in the distribution of verb clusters across West Germanic is the *reanalysis* approach suggested by Haegeman and van Riemsdijk (1986). The account consists of two parts. First, the authors propose that in certain constructions (namely in restructuring constructions that show verb cluster phenomena) the underlying structure can be “reanalyzed”. Reanalysis is essentially a re-bracketing procedure for syntactic structure which reduces the distance between the elements in a cluster and unifies elements that are further away in the basic structure. The second part of the analysis is the postulation of PF-inversion rules that specify which elements can, cannot or have to invert in a reanalyzed structure. Thus, in contrast to most syntactic approaches to the verb cluster phenomenon Haegeman and van Riemsdijk suggest that reordering operations are not operations of syntax proper; rather, reordering operations are post-syntactic morphophonological operations. The inversion parameters suggested by Haegeman and van Riemsdijk (1986) are summarized in (5). As can be seen, the rules consist of specifications regarding the complexity of

the inverting elements (cf. (5a)), the category of the inverting elements (such as modal, auxiliary etc.), a specification regarding (non-)optionality, and specifications regarding the node dominating the inverting elements (cf. (5d) which states that the node V_{α} that dominates the inverting elements has to or does not have to be the highest node in a verb cluster).

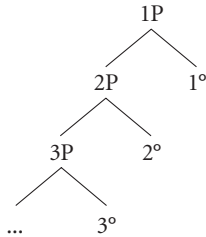
- (5) INVERSION: MAIN PARAMETERS Haegeman and van Riemsdijk (1986:426)
 - a. The nonhead must be (non)branching or need not be branching
 - b. The head of V must be V_{AUX} or V_{MOD} or is unrestricted
 - c. Inversion is optional or obligatory
 - d. V_{α} is maximal or unrestricted

Since the Haegeman and van Riemsdijk system offers a straightforward way to formulate the conditions regulating verb cluster formation in the different languages, it will be used here (in a slightly modified way) to illustrate the generalizations and the specifications necessary to capture the distribution of the verb clusters in Table 1 and Table 12. Whether the first step in a verb cluster configuration – i.e., the step that creates mono-clausal structures – indeed involves reanalysis as Haegeman and van Riemsdijk suggest or any other mechanism that has been suggested to account for clause union or restructuring constructions (see Wurmbrand 2001a, 2001b for an overview) will not be essential for the discussion here.

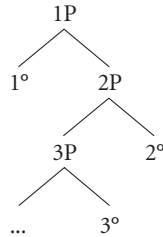
The major idea of inversion is that under certain circumstances, two sister nodes are flipped with each other (see also Williams 1998, 1999, this volume, for a more recent implementation of this idea). Inversion in this sense is reminiscent of precedence constraints as developed in the HPSG framework by, for instance, Kathol (1996, 1998a, 1998b) and Meurers (2000) among many others. As illustrated in (6), inversion of sister nodes derives straightforwardly the orders “3-2-1”, “1-2-3”, “1-3-2”, and “2-3-1” in three-verb clusters.¹¹ To be more specific, the “3-2-1” order in (6a) is the basic structure which does not involve any inversion; the “1-3-2” order is derived by inverting the highest verb with its sister (cf. (6b)); the “2-3-1” order is derived by inverting the middle verb with its sister (cf. (6c)); and the “1-2-3” order is derived by inverting both the highest and the middle verb with their sisters (cf. (6d)). Regarding the “3-1-2” order, however, simple inversion of sister nodes is not sufficient and an additional operation has to be invoked. One option would be to assume that the lowest verb phrase undergoes some form of leftward movement prior to verb cluster inversion. As illustrated in (6e), if this form of leftward movement is followed by high inversion, the “3-1-2” order is derived.¹²

(6) HEAD-FINAL INVERSIONS

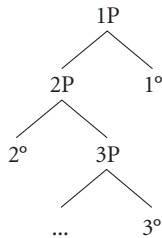
a. *No inversion*



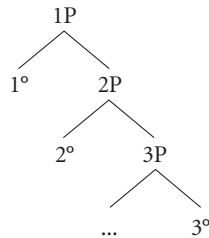
b. *High (=1-2) inversion*



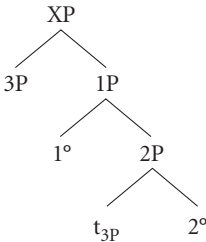
c. *Low (=2-3) inversion*



d. *Two inversions*



e. *Leftward movement of “3” & high inversion*



Importantly, if inversion under sisterhood and leftward movement of the lowest verb phrase are the only tools available to derive verb cluster constructions (modulo object movement etc.), the lack of the “2-1-3” order can be accounted for. To derive this order, rightward movement of the lowest verb phrase would be necessary (which is possible in extraposition constructions, but not in verb cluster configurations).

Armed with these tools, let us now turn to the generalizations and specifications required to account for the distribution of verb clusters in the languages considered here. The inversion rule is given in (7) and the conditions under which inversion applies are listed in Table 13 (“3-LEFT” refers to leftward movement of “3” as in (6e)).¹³

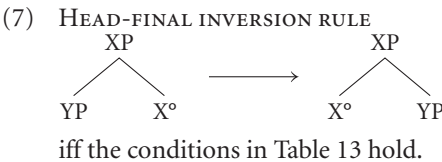
Table 13. Inversion rules (head-final base)

Language	Inversion rules	Optionality	Other
Afrikaans	X = MOD	Obligatory	<i>Will</i> : modal Passive PART: opt. 3-LEFT
Austrian German	Y = MOD	Speaker preferences*	A/M-M-V: optional 3-LEFT <i>Will</i> : modal
Dutch	A: Y = INF	A: Obligatory	Inversion is optional in finite 2-verb clusters
	B: Y = PART	B: Optional	PART: optional 3-LEFT
Frisian	No inversion	—	—
German (Standard)	X = AUX and Y = MOD	Obligatory	<i>Will</i> : modal or auxiliary
German dialects	X = AUX and Y = MOD	Obligatory (some optional)	A-M-V: optional 3-LEFT <i>Will</i> : modal or auxiliary
Swiss	A: X = AUX and Y = MOD	A: Obligatory B: Optional [†]	Optional 3-LEFT 3-2 inversion only if 2-1 inversion
	B: Y = INF		
Vorarlberg	Y = INF and not lexical	Speaker preferences*	A-M-V: optional 3-LEFT <i>Will</i> : modal or auxiliary
West Flemish	A: X = operator [‡] and Y = INF	A: Obligatory B: Optional	Present: [±TENSE] M-A-V: optional 3-LEFT
	B: X, Y = AUX		

* Inversion is preferred when X = AUX; otherwise inversion is dispreferred.

[†] Some speakers prefer inversion.

[‡] Operators are modals, tense, negation.



An illustration of these inversion rules is provided in (8) which summarizes the application of the inversion rules for Austrian German dialects. The inversion rule has the effect that modals invert with their selecting verbs, yielding the “1-3-2” order in (8c, d). The “3-LEFT” rule (together with inversion), yields the “3-1-2” order in the auxiliary-modal constructions (cf. (8d)). No reordering is triggered in two-verb clusters (cf. (8a, b)) and participle constructions (cf. (8e, f)), since these constructions do not constitute the right environment for the inversion rule or the “3-LEFT” rule. To encode the speaker tendencies as noted in Table 12 (i.e., the contrast between “OK”, “?”, and “%”), I will assume the following preference constraints for Austrian German: Inversion is preferred when X = AUX, otherwise

inversion is dispreferred. Thus, in auxiliary-modal constructions, inversion is generally preferred in Austrian German, yielding the “1-3-2” order as the unmarked order, however, in modal-modal constructions, inversion is dispreferred (note that *werden* ‘will’ is classified as a modal in Austrian German; this claim has been made independently by for instance, Erb 2001) and the unmarked order is the “3-2-1” order. I assume that these preference constraints are not hard rules, but show significant speaker variation – i.e., these preference constraints are responsible for large parts of the microparametric variation encountered in German.

(8) AUSTRIAN GERMAN INVERSION PATTERNS

a. *AUX-PART*: no inversion

*weil er das Buch gekauft₂ hat₁ / *hat₁ gekauft₂* 2-1/*1-2
 since he the book bought₂ has₁ / *has₁ bought₂

a'. *AUX-INF*: no inversion

*weil er das Buch kaufen₂ wird₁ / *wird₁ kaufen₂* 2-1/*1-2
 since he the book buy₂ will₁ / *will₁ buy₂

b. *MOD-INF*: no inversion (X = modal, but not Y)

*weil er das Buch kaufen₂ muss₁ / *muss₁ kaufen₂* 2-1/*1-2
 since he the book buy₂ must₁ / *must₁ buy₂

c. *MOD-MOD-V*: optional inversion of MOD; no 3-LEFT environment

weil er es kaufen₃ können₂ will₁ no inversion: 3-2-1
 since he it buy₃ can₂ wants₁

weil er es kaufen₃ können₂ wird₁ no inversion: 3-2-1
 since he it buy₃ can₂ will₁

weil er es will₁ kaufen₃ können₂ inversion: ?/%1-3-2
 since he it wants₁ buy₃ can₂

weil er es wird₁ kaufen₃ können₂ inversion: ?1-3-2
 since he it will₁ buy₃ can₂

weil er es kaufen₃ wird₁ können₂ 3-LEFT & inversion: ?3-1-2
 since he it buy₃ will₁ can₂

d. *AUX-MOD-V*: optional inversion of MOD; optional 3-LEFT; inversion preferred

weil er es hat₁ kaufen₃ können₂ inversion: 1-3-2
 since he it has₁ buy₃ can₂

weil er es kaufen₃ können₂ hat₁ no inversion: %3-2-1
 since he it buy₃ can₂ has₁

weil er es kaufen₃ hat₁ können₂ 3-LEFT & inversion: ?3-1-2
 since he it buy₃ has₁ can₂

- e. *MOD-AUX-V*: no inversion; no 3-LEFT environment
weil er es gekauft₃ haben₂ muss₁ 3-2-1
 since he it bought₃ have₂ must₁ *all others
- f. *AUX-AUX-V*: no inversion; no 3-LEFT environment
weil es gekauft₃ worden₂ ist₁ 3-2-1
 since it bought₃ been₂ is₁ *all others

5. Conclusion

To conclude, the empirical situation of the distribution of verb clusters in West Germanic is fairly complex. As we have seen, there is generally no fixed word order pattern in any given language, rather, the possible word orders depend crucially on the type of elements involved. However, as soon as notions such as the category of an element is taken into consideration, clear generalizations arise which can be straightforwardly formulated in a Haegeman and van Riemsdijk (1986) style analysis. Furthermore, in certain languages (e.g., German), verb clusters show significant microparametric variation which has yet to be systematized.

Notes

1. Not considered for this overview are causative and perception verb constructions as well as double auxiliary constructions of the form *John will have left* since these constructions are less discussed in the literature.
2. Column 4 (i.e., “A-M-V” constructions) refers to the orders in the second construction in (1b) irrespective of whether a language overtly displays the IPP effect. In Afrikaans, for instance, infinitives and particles are non-distinct and hence it cannot be concluded that the middle verb occurs in the IPP form. However, as the different word orders show, it is still necessary to distinguish this construction from others.
3. Please note that this study was a pilot study. Although the overall organization of the questionnaire has proven satisfactory, the study also revealed certain inadequacies, which are being addressed and will be avoided in the follow-up study (currently in preparation). First, since I was unable to perform face-to-face interviews, the study was conducted by sending out questionnaires which the consultants were asked to fill out and return to me. This procedure did not allow me to control for the influence of the written (standard) language, and thus certain results cannot be taken (without further confirmation) as evidence for particular dialects. Second, although I received a large number of questionnaires, certain dialects were insufficiently represented and hence no conclusions about these dialects can be drawn. Finally, since the pilot study was the first attempt to test syntactic variation of this kind, certain task effects could not be avoided (for instance the lack of a future interpreta-

tion of the modal/auxiliary *werden* in Swiss German). A revision of the questionnaire is thus intended to circumvent these problems.

4. In what follows, “German” will refer only to speakers from Germany; “Austrian” will refer to speakers from Austria excluding the speakers from Vorarlberg.

5. Some speakers changed the examples altogether; these answers are not counted here, and hence the numbers do not necessarily add up to the total number of speakers.

6. Two-verb clusters involving an auxiliary-participle construction were not tested in this question. As noted above, most Swiss speakers reject the “1-2” order for auxiliary-participle constructions (see Table 1), however, this order is possible in certain dialects (e.g., Bernese). Further investigation of the distribution of this construction is necessary.

7. Given the significant normative pressure found in many German speaking areas, the numbers of the category “MAYBE” are important, since they (at least in part) can be taken to indicate the actual dialect. That is, this category is generally chosen when a speaker (fully) accepts an order, however, that speaker is also aware of the fact that this order is not a “standard” order. Thus, the numbers of the “MAYBE” category do not necessarily express marginality but also reflect full grammaticality with the awareness of a difference to the standard varieties.

8. The Swiss data are in part from the questionnaire-based study, in part from Schönenberger (1995), Haerberli (p.c.), Schönenberger (p.c.), van Riemsdijk (p.c.). Note that not all Swiss speakers accept all orders listed in the table; a separation according to dialects is not possible at this stage.

9. The notion of “unmarked” word order is crucial to distinguish verb clusters from constructions like stylistic fronting in Icelandic or VP-topicalization.

10. According to a preliminary study conducted by P. Ackema, there is some potential variation among Frisian speakers regarding the possibility of the IPP effect in descending orders. However, the empirical situation is not clear at this point, in particular, as pointed out by G. de Haan (p.c.), there is a strong influence from Dutch which interferes with the data.

11. In this article, only derivations based on a head-final structure are provided. See Wurmbrand (2001b) for an illustration of head-initial derivations.

12. Throughout this article, the distribution of objects in verb clusters will be ignored. If a language does not allow *verb projection raising* (i.e., if objects must occur to the left of the first verb in a cluster), it is assumed that obligatory leftward movement of the object takes place in the structures in (6).

13. The rules do not capture double participle constructions in Dutch as listed in Table 2 / Table 12. The reason why this construction is ignored is that no systematic empirical characterization is available at this point. For one, constructions involving the auxiliary *geworden* are generally considered as marked and rejected by most Dutch speakers. Furthermore, while the “1-3-2” order is attested for the *get* + PART construction (Robbers 1997: 124), it is not clear what the status of the other orders in this construction is. Thus, the rules given in Table 13 below might have to be modified after establishing the empirical situation for this construction.

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Appendix

A. Data and inversion patterns

(9) AFRIKAANS [Data from Robbers 1997]

- a. *AUX-PART*: no inversion
*dat Jan Marie gesien₂ het₁ / *het₁ gesien₂* 2-1/*1-2
 that Jan Marie seen₂ has₁ / *has₁ seen₂
- b. *MOD-INF*: inversion
*dat Jan môre kan₁ werk₂ / *werk₂ kan₁* 1-2/*2-1
 that Jan tomorrow can₁ work₂ / *work₂ can₁
- c. *MOD-MOD-V*: 2 inversions
dat Jan môre sal₁ kan₂ werk₃ 1-2-3
 that Jan tomorrow will₁ can₂ work₃ *all others
- d. *AUX-MOD-V*: 1 inversion
dat Jan kon₂ werk₃ het₁ 2-3-1
 that Jan could₂ work₃ has₁ *all others
- e. *MOD-AUV-V*: 1 inversion
dat Jan Marie kan₁ gesien₃ het₂ 1-3-2
 that Jan Marie can₁ seen₃ have₂ *all others
dat Jan toe kon₁ gevang₃ word₂
 that Jan then could₁ caught₃ be₂
- e'. *MOD-AUX-V*: 1 inversion + 3-LEFT
dat Jan toe gevang₃ kon₁ word₂ 3-1-2
 that Jan then caught₃ could₁ be₂

(10) DUTCH [Data from Rutten 1991; Zwart 1996; Robbers 1997]

- a. *AUX-PART*: optional inversion of participle (B)
dat Jan het boek gelezen₂ heeft₁ / heeft₁ gelezen₂ 2-1/1-2
 that Jan the book read₂ has₁ / has₁ read₂
- b. *MOD-INF*: optional inversion in finite 2-verb clusters (A; special)
dat Jan het boek lezen₂ kan₁ / kan₁ lezen₂ 2-1/1-2
 that Jan the book read₂ can₁ / can₁ read₂
- c. *MOD-MOD-V*: obligatory inversions of infinitives (A)
dat Jan morgen zal/moet₁ kunnen₂ werken₃ 1-2-3
 that Jan tomorrow will/must₁ can₂ work₃ *all others
- d. *AUX-MOD-V*: obligatory inversions of infinitives (A; IPP=infinitive)
dat Jan het boek heeft₁ kunnen₂ lezen₃ 1-2-3
 that Jan the book has₁ can₂ read₃ *all others

- e. MOD-AUX-V: optional inversion of participle (B); obligatory inversion of infinitive (A); optional 3-LEFT

dat Jan Marie kan₁ hebben₂ gezien₃ 1-2-3

that Jan Marie can₁ have₂ seen₃

dat Jan Marie kan₁ gezien₃ hebben₂ 1-3-2

that Jan Marie can₁ seen₃ have₂

dat Jan Marie gezien₃ can₁ hebben₂ 3-1-2

that Jan Marie seen₃ can₁ have₂

(11) GERMAN (STANDARD)

- a. AUX-PART: no inversion (Y is not a modal)

*weil er das Buch gekauft₂ hat₁ / *hat₁ gekauft₂* 2-1/*1-2

since he the book bought₂ has₁ / *has₁ bought₂

- a'. AUX-INF: no inversion (Y is not a modal)

*weil er das Buch kaufen₂ wird₁ / *wird₁ kaufen₂* 2-1/*1-2

since he the book buy₂ will₁ / *will₁ buy₂

- b. MOD-INF: no inversion (Y is not a modal)

*weil er das Buch kaufen₂ muss₁ / *muss₁ kaufen₂* 2-1/*1-2

since he the book buy₂ must₁ / *must₁ buy₂

- c. MOD-MOD-V: no inversion (no X = AUX)

weil er es kaufen₃ können₂ will₁ no inversion: 3-2-1

since he it buy₃ can₂ wants₁ *all others

weil er es kaufen₃ können₂ wird₁ no inversion: 3-2-1

since he it buy₃ can₂ will₁ will = modal

- d. AUX-MOD-V: obligatory inversion of auxiliary and modal

weil er es hat₁ kaufen₃ können₂ inversion: 1-3-2

since he it has₁ buy₃ can₂ *all others

weil er es wird₁ kaufen₃ können₂ inversion: 1-3-2

since he it will₁ buy₃ can₂ will = auxiliary

- e. MOD-AUX-V: no inversion (no Y = MOD)

weil er es gekauft₃ haben₂ muss₁ no inversion: 3-2-1

since he it bought₃ have₂ must₁ *all others

- f. AUX-AUX-V: no inversion (no Y = MOD)

weil es gekauft₃ worden₂ ist₁ 3-2-1

since it bought₃ been₂ is₁ *all others

(12) GERMAN DIALECTS [Questionnaire]

- a. AUX-PART: no inversion (Y is not a modal)

*weil er das Buch gekauft₂ hat₁ / *hat₁ gekauft₂* 2-1/*1-2

since he the book bought₂ has₁ / *has₁ bought₂

- a'. *AUX-INF*: no inversion (Y is not a modal)
*weil er das Buch kaufen₂ wird₁ / *wird₁ kaufen₂* 2-1/*1-2
 since he the book buy₂ will₁ / *will₁ buy₂
- b. *MOD-INF*: no inversion (Y is not a modal)
*weil er das Buch kaufen₂ muss₁ / *muss₁ kaufen₂* 2-1/*1-2
 since he the book buy₂ must₁ / *must₁ buy₂
- c. *MOD-MOD-V*: no inversion; no 3-LEFT environment
weil er es kaufen₃ können₂ will₁ no inversion: 3-2-1
 since he it buy₃ can₂ wants₁
weil er es kaufen₃ können₂ wird₁ no inversion: 3-2-1
 since he it buy₃ can₂ will₁ *will* = modal
- d. *AUX-MOD-V*: obligatory inversion of infinitive (optional for some speakers); optional 3-LEFT
weil er es hat₁ kaufen₃ können₂ inversion: 1-3-2
 since he it has₁ buy₃ can₂
weil er es wird₁ kaufen₃ können₂ inversion: 1-3-2
 since he it will₁ buy₃ can₂ *will* = auxiliary
weil er es kaufen₃ können₂ hat₁ no inversion: % 3-2-1
 since he it buy₃ can₂ has₁
weil er es kaufen₃ hat₁ können₂ 3-LEFT & inversion: ?3-1-2
 since he it buy₃ has₁ can₂
weil er es kaufen₃ wird₁ können₂ 3-LEFT & inversion: ?3-1-2
 since he it buy₃ will₁ can₂
- e. *MOD-AUX-V*: no inversion; no 3-LEFT environment
weil er es gekauft₃ haben₂ muss₁ no inversion: 3-2-1
 since he it bought₃ have₂ must₁
- f. *AUX-AUX-V*: no inversion
weil es gekauft₃ worden₂ ist₁ no inversion: 3-2-1
 since it bought₃ been₂ is₁ *all others
- (13) SWISS [Data from Schönenberger 1995; Hsiao 1999; Schönenberger p.c.; Haeberli p.c.]
- a. *AUX-PART*: no inversion (Y is not a modal or an infinitive)
*das t chatz fisch gässe₂ hät₁ / *hät₁ gässe₂* 2-1/*1-2
 that the cat fish eaten₂ has₁ / *has₁ eaten₂
- b. *MOD-INF*: optional inversion (B)
das t chatz fisch ässe₂ mues₁ / mues₁ ässe₂ 2-1/1-2
 that the cat fish eat₂ must₁ / must₁ eat₂

- c. MOD-MOD-V: optional inversion of infinitives (B); optional 3-LEFT
- das er ... wil₁ chöne₂ vorsinge₃* 2 inversions: 1-2-3
 that he ... wants₁ can₂ sing₃
- das er ... vorsinge₃ chöne₂ wil₁* no inversion: 3-2-1
 that he ... sing₃ can₂ wants₁
- das er ... wil₁ vorsinge₃ chöne₂* 1 inversion: % 1-3-2
 that he ... wants₁ sing₃ can₂
- das er ... vorsinge₃ wil₁ chöne₂* 3-LEFT & inversion: % 3-1-2
 that he ... sing₃ wants₁ can₂
- d. AUX-MOD-V: obligatory inversion of AUX/MOD (A); optional inversion of infinitive (B); optional 3-LEFT
- das de Jonas hät₁ müese₂ schwimme₃* A & B: 1-2-3
 that the Jonah has₁ must₂ swim₃
- das de Jonas hät₁ schwimme₃ müese₂* A: % 1-3-2
 that the Jonah has₁ swim₃ must₂
- das de Jonas schwimme₃ hät₁ müese₂* 3-LEFT & A: % 3-1-2
 that the Jonah swim₃ has₁ must₂
- e. MOD-AUX-V: optional inversion of infinitive (B); optional 3-LEFT
- wil er si mues₁ gsee₃ ha₂* B: 1-3-2
 since he her must₁ seen₃ have₂
- wil er si gsee₃ mues₁ ha₂* 3-LEFT: 3-1-2
 since he her seen₃ must₁ have₂
- wil er si gsee₃ ha₂ mues₁* no inversion: % 3-2-1
 since he her seen₃ have₂ must₁
- f. AUX-AUX-V: no inversion (3-LEFT also yields 3-2-1)
- das de Hans gwählt₃ worde₂ isch₁* no inversion: 3-2-1
 that the John elected₃ been₂ is₁
- (14) VORARLBERG [Questionnaire; not all constructions have been tested and only the data that are documented are presented here]
- a. AUX-PART: no inversion
- weil er das Buch gekauft₂ hat₁ / *hat₁ gekauft₂* 2-1/*1-2
 since he the book bought₂ has₁ / *has₁ bought₂
- b. MOD-INF: no inversion of main verb infinitives
- weil er das Buch kaufen₂ muss₁ / ??muss₁ kaufen₂* 2-1/*1-2
 since he the book buy₂ must₁ / ??must₁ buy₂

- c. *MOD-MOD-V*: optional (but marked) inversion of non-main verb infinitive; no 3-LEFT environment
- weil er es kaufen₃ können₂ will₁* no inversion: 3-2-1
 since he it buy₃ can₂ wants₁
- weil er es will₁ kaufen₃ können₂* inversion: ?1-3-2
 since he it wants₁ buy₃ can₂
- d. *AUX-MOD-V*: optional (but preferred) inversion of non-main verb infinitive; optional 3-LEFT
- weil er es hat₁ kaufen₃ können₂* inversion: ?1-3-2
 since he it has₁ buy₃ can₂
- weil er es wird₁ kaufen₃ können₂* inversion: ?1-3-2
 since he it will₁ buy₃ can₂
- weil er es kaufen₃ können₂ hat₁* no inversion: % 3-2-1
 since he it buy₃ can₂ has₁
- weil er es kaufen₃ können₂ wird₁* no inversion: ?3-2-1
 since he it buy₃ can₂ will₁ *will*: modal or auxiliary
- weil er es kaufen₃ hat₁ können₂* 3-LEFT & inversion: 3-1-2
 since he it buy₃ has₁ can₂
- weil er es kaufen₃ wird₁ können₂* 3-LEFT & inversion: ?3-1-2
 since he it buy₃ will₁ can₂
- e. *MOD-AUX-V*: optional (but marked) inversion of infinitive; no 3-LEFT environment
- weil er es gekauft₃ haben₂ muss₁* 3-2-1
 since he it bought₃ have₂ must₁
- weil er es muss₁ gekauft₃ haben₂* inversion: % 1-3-2
 since he it must₁ bought₃ have₂
- f. *AUX-AUX-V*: no inversions
- weil es gekauft₃ worden₂ ist₁* 3-2-1
 since it bought₃ been₂ is₁ *all others
- (15) WEST FLEMISH [Data from Haegeman 1994:511/517; Haegeman 1995:59; Haegeman 1998, p.c.]
- a. *AUX-PART*: no inversion
- da Valère dienen boek gelezen₂ oat₁ / *oa₁ gelezen₂* 2-1/*1-2
 that Valère that book read₂ had₁ / *had₁ read₂
- b. *MOD-INF*: obligatory inversion with modal (= operator)
- da V. dienen boek *kuopen₂ wilt₁ / wilt₁ kuopen₂* 1-2/*2-1
 that V. this book *buy₂ wants₁ / wants₁ buy₂

- c. MOD-MOD-V: obligatory inversion with modals (= operator)
dan ze dienen boek kosten₁ willen₂ kupen₃ 1-2-3
 that they this book could₁ want₂ buy₃
- d. AUX-MOD-V: obligatory inversion with modal (= operator); obligatory inversion with AUX when operator (i.e., when [+ TENSE / + NEG])
da Valère willen₂ Marie dienen boek geven₃ eet₁ 2-3-1
 that Valère want₂ Marie that book give₃ has₁
da Valère ee₁ willen₂ Marie dienen boek geven₃ 1-2-3
 that Valère has₁ want₂ Marie that book give₃
da Valère oa₁ willen₂ Marie dienen boek geven₃ 1-2-3
 that Valère had₁ want₂ Marie that book give₃
da Valère nooit en-ee₁ willen₂ Marie dienen boek geven₃
 that Valère never NEG-has₁ want₂ Marie that book give₃ 1-2-3
 ?**da Valère willen₂ Marie dienen boek geven₃ oat₁* ?*2-3-1
 that Valère want₂ Marie that book give₃ had₁
 ?**da Valère nooit willen₂ Marie dienen boek geven₃ en-eet₁*
 that Valère never want₂ Marie that book give₃ NEG-has₁ ?*2-3-1
- e. MOD-AUX-V: inversion with modal (= operator); optional 3-LEFT
dat Jan ... moe₁ gezien₃ een₂ inversion: 1-3-2
 that Jan ... must₁ seen₃ have₂
da Jan ... gezien₃ moet₁ een₂ 3-LEFT: 3-1-2
 that Jan ... seen₃ must₁ have₂
- f. AUX-AUX-V: optional inversion of AUX&AUX
da Jan gekozen₃ geworden₂ is₁ no inversion: 3-2-1
 that Jan elected₃ been₂ is₁
dat Jan is₁ gekozen₃ geworden₂ inversion: 1-3-2
 that Jan is₁ elected₃ been₂

B. Questionnaire

Liebe Deutschsprecher!

Ich bin eine Linguistin und nehme im Moment an einem Projekt teil, das die Wortfolge von Sätzen wie “Der Kommissar hat den Fall nicht lösen können” in verschiedenen deutschen und holländischen Dialekten untersucht. Vorläufige Untersuchungen haben ergeben, dass es in diesem Bereich sehr große dialektale Unterschiede gibt, die bisher nur oberflächlich dokumentiert worden

sind. Das Ziel unserer Studie ist es daher, einen systematischen Dialektatlas herzustellen, der Sprecherunterschiede in der Wortfolge katalogisiert und verschiedenen Dialekten zuordnet.

Falls der Fragebogen für Sie zu umfangreich ist, füllen Sie bitte nur so viel aus, wie es Ihnen möglich ist. Schicken Sie uns bitte auch teilweise ausgefüllte Fragebögen. Jede Information ist für uns von höchstem Wert!

Wir ersuchen Sie zuerst, uns die folgenden Informationen zur Verfügung zu stellen. Die Angaben sind für uns sehr wichtig, da wir feststellen wollen, ob und wie bestimmte Wortfolgen mit verschiedenen geographischen Einteilungen verbunden sind.

Geburtsort (Stadt/Bundesland):

Wohnort (Stadt/Bundesland):

[Wenn Geburtsort und Wohnort verschieden sind]

Geben Sie bitte an, seit wann Sie am Wohnort leben:

Andere Umstände, die Ihrer Meinung nach Ihren Dialekt beeinflussen/beeinflusst haben:

Welcher Dialektgruppe würden Sie sich zuordnen:

- Sprechen Sie (im Durchschnitt):*
- ☐ nur Dialekt
 - ☐ hauptsächlich Dialekt
 - ☐ nur Standardsprache ("Hochdeutsch")
 - ☐ hauptsächlich Standardsprache
 - ☐ Standardsprache in Arbeit/Dialekt zu Hause
 - ☐ hauptsächlich eine andere Sprache welche:
 - ☐ andere Situation bitte beschreiben Sie:

Name (freiwillig):

Beruf (freiwillig):

Höchste abgeschlossene Schulbildung (freiwillig):

Bevor wir mit den Fragen beginnen, möchten wir noch einen sehr wichtigen Punkt hervorstreichen. Uns kommt es überhaupt nicht darauf an, was man in der Schule als "richtiges" Deutsch lernt. **Wir wollen wissen, wie Sie die Sprache im alltäglichen Leben verwenden.** Also, bitte versuchen Sie nicht, das zu schreiben, was die Deutschlehrer Ihnen eingetrichtert haben, sondern wirklich das, was Ihnen am natürlichsten vorkommt!

Frage 1:

Im folgenden geben wir Ihnen jeweils eine kurze Beschreibung einer Situation. Am Ende steht der Beginn eines Satzes und eine Anzahl von Wörtern in beliebiger Reihenfolge. Bitte setzen Sie den Satz **mit genau den (und nur den) angegebenen Wörtern** so fort, wie er Ihnen am besten oder am natürlichsten vorkommt. Falls mehrere Wortfolgen möglich sind, vermerken Sie bitte alle Möglichkeiten. Wir ersuchen Sie zwar, den Satz niederzuschreiben, aber bitte versuchen Sie sich vorzustellen, wie Sie den Satz aussprechen würden (vielleicht sagen Sie sich den Satz selbst laut vor).

Ein Mord ist geschehen; der Kommissar ist auf der Suche nach Augenzeugen. Hans meldet sich am Revier...

Er gibt zu Protokoll,

[gesehen/den Mörder/dass/hat/er]

Der Kommissar geht weiteren Untersuchungen nach; er findet heraus, dass zum Zeitpunkt des Mordes die Straßenbeleuchtung ausgefallen war und es zu dunkel war, um irgendetwas zu sehen

Er kommt zu dem Schluss,

[gesehen/nicht/den Mörder/dass/kann/Hans/haben]

Die Untersuchungen gehen weiter, aber es finden sich keine neuen Indizien; der Kommissar ist verzweifelt...

Er glaubt,

[aufklären/nicht/den Mord/dass/kann/er]

Am nächsten Tag wird er zum Polizeidirektor vorgeladen

Dieser fragt,

[gelöst/noch nicht/ist/der Fall/warum/worden]

Der Kommissar berichtet,

[aufklären/noch nicht/den Mord/warum/hat/er/ können]

Der Polizeidirektor ist erbost; seine politische Karriere steht auf dem Spiel

Er befiehlt,

[gelöst/in den nächsten Tagen/werden/dieser Fall/dass/muss]

Der Kommissar geht deprimiert nach Hause; seine Frau fragt, was los ist

Er berichtet,

[aufklären/den Mord/dass/muss/er/können]

Leider finden sich aber auch in den nächsten zwei Monaten keine neuen Spuren, und nach einem halben Jahr...

liest man in der Zeitung,

[gelöst/nicht/konnte/der Fall/dass/werden]

Frage 2

Hier bitten wir Sie, einzelne vorgegebene Sätze zu beurteilen.

Als Bewertungskriterien verwenden Sie bitte:

- JA:** Diesen Satz würde ich genau so sagen
NEIN: Diesen Satz würde ich nie so sagen
VIELLEICHT: Ich könnte mir vorstellen, dass jemand diesen Satz so sagt, aber es ist nicht, wie ich es gewöhnlich sage

Falls diese Kriterien nicht ausreichen, können Sie jederzeit eine eigene Beschreibung angeben, die Ihrer Meinung nach besser zutrifft. Wenn Sie zusätzliche Kommentare zu einzelnen Sätzen haben, vermerken Sie das bitte auch.

Bitte beachten Sie auch hier wieder, dass wir gerne wissen möchten, wie Sie in Ihrem Dialekt die Sätze verwenden, und nicht, was als hochsprachlich korrekt gilt!

	Ja	Nein	Viel.
Ich frage mich, warum der Kommissar den Fall nicht hat lösen können	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Es wurde bewiesen, dass er den Mörder nicht gesehen haben kann	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich weiß nicht, ob der Kommissar den Fall wird lösen können	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sie schreiben, dass der Fall schon gelöst ist worden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich frage mich, warum der Kommissar den Fall nicht können lösen hat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Es wurde bewiesen, dass er den Mörder nicht gesehen kann haben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich weiß nicht, ob der Kommissar den Fall lösen wird können	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sie schreiben, dass der Fall schon ist worden gelöst	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich frage mich, warum der Kommissar den Fall nicht lösen hat können	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Es wurde bewiesen, dass er den Mörder nicht kann haben gesehen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich weiß nicht, ob der Kommissar den Fall lösen können wird	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Der Kommissar freut sich, weil er einen neuen Fall kann lösen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich frage mich, warum der Kommissar den Fall nicht hat können lösen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich weiß nicht, ob der Kommissar den Fall wird können lösen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sie schreiben, dass der Fall schon ist gelöst worden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Der Kommissar freut sich, weil er einen neuen Fall soll lösen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich frage mich, warum der Kommissar den Fall nicht können hat lösen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Es wurde bewiesen, dass er den Mörder nicht kann gesehen haben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich frage mich, warum der Kommissar den Fall nicht lösen können hat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Frage 3

Bitte setzen Sie wiederum die angegebenen Wörter in die Reihenfolge, die Ihnen als erstes einfällt und am besten vorkommt

Jeder findet, dass ein so erfahrener Kommissar diesen Fall schon längst

[können/lösen/sollen/hätte] _____

Einige Freunde sind abends verabredet; sie erwarten auch den Hans; er lässt sich allerdings den ganzen Abend nicht blicken. Sie überlegen, warum er nicht gekommen ist, und kommen zum Schluss, dass seine Eltern ihm (wie schon öfters) verboten haben auszugehen.

Die Freunde denken, dass der Hans wohl wieder einmal nicht

[dürfen/wird/ausgehen/haben] _____

Zuletzt bitten wir Sie noch, die folgenden Sätze wie in Frage 2 zu bewerten. [Da die folgenden Sätze doch etwas "anstrengend" sind, erinnern wir noch einmal daran, dass wir gerne auch unvollständige Fragebögen annehmen]

	Ja	Nein	Viel.
Jeder findet, dass ein so erfahrener Kommissar diesen Fall schon längst hätte lösen können sollen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Freunde denken, dass der Hans wohl wieder einmal nicht wird ausgehen dürfen haben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeder findet, dass ein so erfahrener Kommissar diesen Fall schon längst hätte sollen lösen können	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Freunde denken, dass der Hans wohl wieder einmal nicht wird haben ausgehen dürfen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maria glaubt, dass ihr Vater den Wagen schon muss repariert haben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeder findet, dass ein so erfahrener Kommissar diesen Fall schon längst hätte lösen sollen können	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Freunde denken, dass der Hans wohl wieder einmal nicht wird ausgehen haben dürfen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeder findet, dass ein so erfahrener Kommissar diesen Fall schon längst hätte sollen können lösen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Freunde denken, dass der Hans wohl wieder einmal nicht wird haben dürfen ausgehen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeder findet, dass ein so erfahrener Kommissar diesen Fall schon längst lösen können sollen hätte	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maria glaubt, dass jeder muss schwimmen können	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Freunde denken, dass der Hans wohl wieder einmal nicht ausgehen dürfen haben wird	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeder findet, dass ein so erfahrener Kommissar diesen Fall schon längst lösen hätte können sollen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Freunde denken, dass der Hans wohl wieder einmal nicht ausgehen wird dürfen haben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeder findet, dass ein so erfahrener Kommissar diesen Fall schon längst lösen können hätte sollen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Freunde denken, dass der Hans wohl wieder einmal nicht ausgehen dürfen wird haben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeder findet, dass ein so erfahrener Kommissar diesen Fall schon längst lösen hätte sollen können	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Freunde denken, dass der Hans wohl wieder einmal nicht ausgehen wird haben dürfen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Vielen Dank, dass Sie sich bereit erklärt haben, uns bei dieser Studie zu unterstützen!

C. Other statistical results

Table 14. Answers to Question 1 (IPP construction; fill-in)

Number of speakers	Germans	Austrians	VLBG	Swiss
who gave (exactly) one order	49	16	4	1
who gave (exactly) two orders	2	3	2	
who gave (exactly) three orders	3	1		2
who gave four orders			1	1
who gave no order or no order with 3 verbs	2			1
Totals	56	20	7	5
who gave only 1-3-2	49	12		
who gave only 3-2-1		4		
who gave only 3-1-2			4	
who gave only 1-2-3			1	
who gave (only) 1-3-2 and 3-2-1	2	1		
who gave (only) 1-3-2 and 3-1-2		2	2	
who gave (only) 1-3-2, 3-2-1, 3-1-2	3	1		
who gave (only) 1-3-2, 3-1-2, 1-2-3				2
who gave (only) 1-3-2, 3-2-1, 3-1-2, 1-2-3			1	1
who gave none of the above	2			1
Totals	56	20	7	5
who gave (exactly) one order	88	80	57	20
who gave (exactly) two orders	4	15	29	0
who gave (exactly) three orders	5	5	0	40
who gave four orders	0	0	14	20
who gave no order or no order with 3 verbs	4	0	0	20
Totals	100	100	100	100
who gave only 1-3-2	88	60	0	0
who gave only 3-2-1	0	20	0	0
who gave only 3-1-2	0	0	57	0
who gave only 1-2-3	0	0	0	20
who gave (only) 1-3-2 and 3-2-1	4	5	0	0
who gave (only) 1-3-2 and 3-1-2	0	10	29	0
who gave (only) 1-3-2, 3-2-1, 3-1-2	5	5	0	0
who gave (only) 1-3-2, 3-1-2, 1-2-3	0	0	0	40
who gave (only) 1-3-2, 3-2-1, 3-1-2, 1-2-3	0	0	14	20
who gave none of the above	4	0	0	20
Totals	100	100	100	100

Table 15. Answers to Question 2 (sum of “Yes” and “Maybe”)

Percentages of answers		Germans		Austrians		VLBG		Swiss	
Construction	Order	+/?	–	+/?	–	+/?	–	+/?	–
MOD-V	1-2	13	88	15	85	17	83	100	0
‘can/shall solve’	1-2	7	93	25	75	29	71	100	0
MOD-AUX-V	1-2-3	4	96	0	100	0	100	0	100
FIN-INF-PART	1-3-2	16	84	25	75	43	57	100	0
‘can have seen’		11	89	9	91	60	40	75	25
	3-1-2	18	82	15	85	0	100	83	17
	3-2-1	96	4	100	0	100	0	50	50
AUX-MOD-V	1-2-3	41	59	45	55	67	33	100	0
FIN-IPP-INF	1-3-2	100	0	95	5	86	14	67	33
‘has can solve’	3-1-2	73	27	95	5	100	0	67	33
	3-2-1	65	35	70	30	57	43	42	58
	2-3-1	17	83	20	80	33	67	42	58
	2-1-3	7	93	15	85	29	71	58	42
MOD-MOD-V	1-2-3	14	86	20	80	43	57	100	0
FIN-INF-INF	1-3-2	19	81	64	36	100	0	75	25
‘must can swim’		98	2	100	0	100	0	75	25
‘will can solve’	3-1-2	50	50	80	20	100	0	100	0
	3-2-1	95	5	89	11	100	0	83	17
AUX-AUX-V	1-2-3	2	98	0	100	0	100	0	100
FIN-PART-PART	1-3-2	5	95	15	85	14	86	33	67
‘is been solved’	3-1-2	7	93	10	90	0	100	17	83

Table 16. Answers to Question 3 (multiple choice)

Percentages of answers		Germans			Austrians		
Order	Example	YES	NO	?	YES	NO	?
1-4-3-2	hätte lösen können sollen	89	0	11	65	15	20
1-4-3-2	wird ausgehen dürfen haben	11	61	28	15	55	30
1-2-4-3	hätte sollen lösen können	13	37	50	35	33	33
1-2-4-3	wird haben ausgehen dürfen	24	33	43	25	20	55
1-4-2-3	hätte lösen sollen können	21	44	34	25	35	40
1-4-2-3	wird ausgehen haben dürfen	28	42	29	50	30	20
1-2-3-4	hätte sollen können lösen	2	87	11	0	90	10
1-2-3-4	wird haben dürfen ausgehen	0	91	9	0	85	15
4-3-2-1	lösen können sollen hätte	11	61	28	15	65	20
4-3-2-1	ausgehen dürfen haben wird	21	50	29	20	35	45
4-1-3-2	lösen hätte können sollen	15	41	44	16	42	42
4-1-3-2	ausgehen wird dürfen haben	2	90	8	0	90	10
4-3-1-2	lösen können hätte sollen	10	63	27	20	35	45
4-3-1-2	ausgehen dürfen wird haben	0	92	8	5	80	15
4-1-2-3	lösen hätte sollen können	8	67	25	10	80	10
4-1-2-3	ausgehen wird haben dürfen	6	62	32	10	50	40
1-4-3-2	hätte lösen können sollen	36	64	0	60	0	40
1-4-3-2	wird ausgehen dürfen haben	0	43	57	13	75	13
1-2-4-3	hätte sollen lösen können	71	0	29	100	0	0
1-2-4-3	wird haben ausgehen dürfen	0	43	57	0	67	33
1-4-2-3	hätte lösen sollen können	0	50	50	60	20	20
1-4-2-3	wird ausgehen haben dürfen	14	57	29	33	67	0
1-2-3-4	hätte sollen können lösen	0	57	43	90	0	10
1-2-3-4	wird haben dürfen ausgehen	0	86	14	33	33	33
4-3-2-1	lösen können sollen hätte	0	71	29	0	30	70
4-3-2-1	ausgehen dürfen haben wird	14	71	14	0	67	33
4-1-3-2	lösen hätte können sollen	29	14	57	0	50	50
4-1-3-2	ausgehen wird dürfen haben	14	57	29	0	83	17
4-3-1-2	lösen können hätte sollen	14	71	14	30	20	50
4-3-1-2	ausgehen dürfen wird haben	0	86	14	0	83	17
4-1-2-3	lösen hätte sollen können	14	57	29	80	20	0
4-1-2-3	ausgehen wird haben dürfen	0	43	57	25	50	25

Hungarian verbal clusters

Results of a questionnaire survey*

Kriszta Szendrői and Ildikó Tóth

1. Introduction

Following similar work on verbal clusters in German (Wurmbrand this volume), we designed a questionnaire on the verbal cluster in Hungarian. The aim of the questionnaire was twofold. First, to find out whether the judgments established in the literature are supported by a countrywide survey. Second, to find out whether there is dialectal variation in the possible orders within the verbal cluster. On the whole, the results of the survey support the judgments available in the literature, and they do not seem to show any significant dialectal variation.

Bródy (1997) argued that there are essentially two distinct constructions in Hungarian that involve verbal clusters. In non-neutral sentences, containing a contrastive focus or sentential negation, the verbal cluster optionally appears in a roll-up construction. In neutral sentences, the verbal cluster exhibits particle climbing. Although positions differ considerably in the analysis given to these constructions, there is a general consensus in the literature with regards to the segmentation of the data along this line (see also Bródy this volume; É. Kiss 1998, 1999, this volume; Koopman & Szabolcsi 2000). Accordingly, we concentrated on these two constructions.

We would like to report results that concern three aspects of the ordering of verbal clusters. First, in Section 2, we analyze the results of Question 4 of the questionnaire. We claim that the results support the dominant view of the literature that roll-up structures are subject to certain restrictions. In particular, roll-up formation must start at the bottommost verb of the cluster; no English order sequence may undergo roll-up formation; and no long roll-up is possible i.e. a verb must invert with the closest c-commanding verb.

Second, in Section 3, we show that the results of Question 2 do not indicate any dialectal variation with respect to the possibility of climbing in a non-neutral con-

struction. Rather, all instances of ‘partial climbing’ (i.e. particle climbing in a non-neutral sentence to a position lower than the finite verb) are fully ungrammatical, at least if the cluster involves four verbs.

Third, in Section 4, we provide evidence for the claim that not all infinitival complement taking verbs that take part in roll-ups necessarily exhibit climbing. We support our claim by the results of Question 3, which show that a stress-avoiding verb *látszik* ‘seems’ does not allow particle climbing in neutral sentences. Rather, inversion takes place.¹

83 questionnaires were evaluated from over a dozen counties. A full breakdown is given in the Appendix. The questionnaires were sent out on email or by post and the answers were submitted similarly either by email or by post. There were four questions. Following Wurmbrand’s (this volume) questionnaire, two questions were multiple choice questions (Q2 and Q4) and the other two were fill-in questions (Q1 and Q3). The reason for using both methods was the high degree of variation among the acceptability of a given order in a verbal cluster. In the fill-in question, the speakers were asked to put down the first order that comes to their mind, and also other orders if they felt that these were also possible. In the multiple choice question, they were asked to give grammatical judgments on a particular order. Some examples are given below.

2. Roll-up

As Bródy (1997), É. Kiss (1998, 1999), Koopman and Szabolcsi (2000) and others discuss extensively, in so-called non-neutral sentences (those involving contrastive focus or negation), certain infinitival verb sequences may appear in a ‘roll-up’ order. In (1a), the verbs appear in the so-called English order, the order that is semantically transparent. In (1b) the lowest verb, V_4 , appears on the left of V_3 ; in (1c) the sequence V_4 – V_3 appears on the left of V_2 , as if the cluster rolled up step by step, from the bottom.

- (1) a.

Foc

V_1

V_2

V_3

V_4

Péter hétfőn nem ér rá.

Kedden

fog tudni

járni

edzeni.

Tuesday-on

will

can-INF

go-INF

train-INF

‘Peter is busy on Mondays. He will be able to go training on Tuesdays.’
- b.

Foc

V_1

V_2

V_4

V_3

Péter hétfőn nem ér rá.

Kedden

fog tudni

edzeni

járni.

Tuesday-on

will

can-INF

train-INF

go-INF

‘Peter is busy on Mondays. He will be able to go training on Tuesdays.’

(Question 4 Sentence 3 = Q4 S3 for short)

- c.
- | | FOC | V ₁ | V ₄ | V ₃ | V ₂ |
|--------------------------------|---------------|----------------|----------------|----------------|----------------|
| <i>Péter hétfőn nem ér rá.</i> | <i>Kedden</i> | <i>fog</i> | <i>edzeni</i> | <i>járni</i> | <i>tudni.</i> |
| | Tuesday-on | will | train-INF | go-INF | can-INF |
- ‘Peter is busy on Mondays. He will be able to go training on Tuesdays.’

Certain generalizations have been formulated in the literature with regard to the roll-up order. First, roll-up is always from the bottom, it cannot start at an intermediate verb. Thus, the *_{FOC}-V₁-V₃-V₂-V₄ order is ungrammatical, as this order involves rolling-up V₃, while V₄ is in situ. Second, it has been noted that only rolled-up sequences may undergo further roll-up, no English-order sequence may undergo roll-up. Thus, *_{FOC}-V₁-V₃-V₄-V₂ is ungrammatical, as this order involves the roll-up of the sequence V₃-V₄. Third, it has been noted that there is no such thing as long roll-up, i.e. a roll-up always effects immediately adjacent verbs. Thus V₄ may not invert with V₂ across V₃. Hence the ungrammaticality of the *_{FOC}-V₁-V₄-V₂-V₃ sequence.

Altogether, the literature claims the availability of three possible orders (as in (1)), and the ungrammaticality of another three orders. These six orders are summarized in (2). According to Bródy’s (1990, 1995) analysis of the Hungarian focus construction, the finite verb, V₁, moves to a functional head, F, accompanying the movement of the focused constituent to [Spec, FP]. This residual V2 effect explains why V₁ always appears at the left edge of the verbal cluster. If one accepts Bródy’s analysis of focus, then the six orders in (2) are in fact the only logically possible orders of a four-verb cluster in a non-neutral sentence.

- | | | | |
|--------|--|-----------------------------------|---------|
| (2) a. | _{FOC} -V ₁ -V ₂ -V ₃ -V ₄ | ENGLISH ORDER | Group A |
| b. | _{FOC} -V ₁ -V ₂ -V ₄ -V ₃ | PARTIAL ROLL-UP | Group B |
| c. | _{FOC} -V ₁ -V ₄ -V ₃ -V ₂ | FULL ROLL-UP | Group C |
| d. | * _{FOC} -V ₁ -V ₃ -V ₂ -V ₄ | ROLL-UP FROM THE MIDDLE | Group D |
| e. | * _{FOC} -V ₁ -V ₃ -V ₄ -V ₂ | ROLL-UP OF ENGLISH ORDER SEQUENCE | Group E |
| f. | * _{FOC} -V ₁ -V ₄ -V ₂ -V ₃ | LONG ROLL-UP | Group F |

In Question 4 we tested the six orders given in (2). Each order was tested by three separate examples. The stimuli from Question 4 are given in (3). Class 1 contains the examples that were reported as grammatical orders in the literature. Class 2 contains the orders that we expected to be ungrammatical on the basis of the literature. Within the classes, the groups A, B, C, D, E and F contain the sentences corresponding to the orders tested.

(3) DATA FROM QUESTION 4

Class 1

Group A: _{FOC}-V₁-V₂-V₃-V₄ ENGLISH ORDER

S10 *Péter hétfőn nem ér rá. Kedden fog tudni járni edzeni.*
 Tuesday-on will can-INF go-INF train-INF

‘Peter is busy on Mondays. He will be able to go training on TUESDAYS.’

- S25 *Ritkán fog akarni járni fel lépni a vidéki*
rarely will want-INF go-INF PV step-INF the provincial
színházakban.
theaters-in

‘He will RARELY want to go to perform in the provincial theaters.’

- S30 *Nem Mari, hanem Péter fog járni tanulni úszni.*
not Mary rather Peter will go-INF learn-INF swim-INF
‘Not Mary, but rather PETER will go to learn to swim.’

Group B: FOC-V₁-V₂-V₄-V₃ PARTIAL ROLL-UP

- S3 *Péter hétfőn nem ér rá. Kedden fog tudni edzeni járni.*
Tuesday-on will can-INF train-INF go-INF
‘Peter is busy on Mondays. He will be able to go training on TUESDAYS.’

- S5 *Ritkán fog akarni fel lépni járni a vidéki*
rarely will want-INF PV step-INF go-INF the provincial
színházakban.
theaters-in
‘He will RARELY want to go to perform in the provincial theaters.’

- S20 *Nem Mari, hanem Péter fog járni úszni tanulni.*
not Mary rather Peter will go-INF swim-INF learn-INF
‘Not Mary, but rather PETER will go to learn to swim.’

Group C: FOC-V₁-V₄-V₃-V₂ FULL ROLL-UP

- S13 *Ritkán fog fel lépni járni akarni a vidéki*
rarely will PV step-INF go-INF want-INF the provincial
színházakban.
theaters-in
‘He will RARELY want to go to perform in the provincial theaters.’

- S26 *Nem Mari, hanem Péter fog úszni tanulni járni.*
not Mary rather Peter will swim-INF learn-INF go-INF
‘Not Mary, but rather PETER will go to learn to swim.’

- S28 *Péter hétfőn nem ér rá. Kedden fog edzeni járni tudni.*
Tuesday-on will train-INF go-INF can-INF
‘Peter is busy on Mondays. He will be able to go training on TUESDAYS.’

Class 2

Group D: FOC-V₁-V₃-V₂-V₄ ROLL-UP FROM THE MIDDLE

- S8 *Nem Mari, hanem Péter fog tanulni járni úszni.*
 not Mary rather Peter will learn-INF go-INF swim-INF
 'Not Mary, but rather PETER will go to learn to swim.'
- S18 *Ritkán fog járni akarni fel lépni a vidéki színházakban.*
 rarely will go-INF want-INF PV step-INF the provincial theaters-in
 'He will RARELY want to go to perform in the provincial theaters.'
- S33 *Péter hétfőn nem ér rá. Kedden fog járni tudni edzeni.*
 Tuesday-on will can-INF go-INF train-INF
 'Peter is busy on Mondays. He will be able to go training on TUES-DAYS.'

Group E: FOC-V₁-V₃-V₄-V₂ ROLL-UP OF ENGLISH ORDER SEQUENCE

- S1 *Nem Mari, hanem Péter fog tanulni úszni járni.*
 not Mary rather Peter will learn-INF swim-INF go-INF
 'Not Mary, but rather PETER will go to learn to swim.'
- S21 *Ritkán fog járni fel lépni akarni a vidéki színházakban.*
 rarely will go-INF PV step-INF want-INF the provincial theaters-in
 'He will RARELY want to go to perform in the provincial theaters.'
- S22 *Péter hétfőn nem ér rá. Kedden fog járni edzeni tudni.*
 Tuesday-on will go-INF train-INF can-INF
 'Peter is busy on Mondays. He will be able to go training on TUES-DAYS.'

Group F: FOC-V₁-V₄-V₂-V₃ LONG ROLL-UP

- S14 *Nem Mari, hanem Péter fog úszni járni tanulni.*
 not Mary rather Peter will swim-INF go-INF learn-INF
 'Not Mary, but rather PETER will go to learn to swim.'
- S15 *Péter hétfőn nem ér rá. Kedden fog edzeni tudni járni.*
 Tuesday-on will train-INF can-INF go-INF
 'Peter is busy on Mondays. He will be able to go training on TUES-DAYS.'
- S31 *Ritkán fog fel lépni akarni járni a vidéki színházakban.*
 rarely will PV step-INF want-INF go-INF the provincial theaters-in
 'He will RARELY want to go to perform in the provincial theaters.'

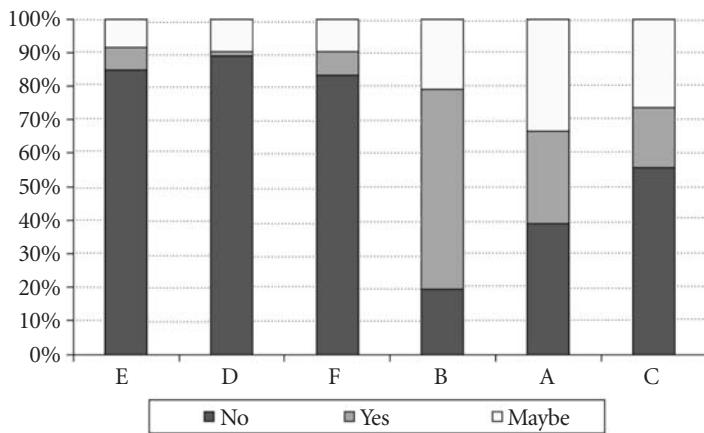


Figure 1. Orders in a non-neutral sentence with four verbs

The results of Question 4 are summarized in Figure 1.² Groups A, B, C, D, E and F appear on the horizontal axis, while the percentage of NO/YES/MAYBE judgments are shown on the vertical axis. Groups D, E and F were judged ungrammatical over 80% of the times. This confirms the judgments available in the literature that in Hungarian, there is no roll-up from the middle (Group D), no roll-up of an English order sequence (Group E), and no long roll-up (Group F).

The best order in a non-neutral sentence involving a verbal cluster with four verbs is the partial roll-up (Group B). This was judged grammatical 60% of the times and over 20% of the people thought it may be grammatical, with less than 20% disallowing it altogether.

One of the surprising results concerns the English order (Group A) and the full roll-up (Group C). The first was judged ungrammatical by almost 40% of the people, while the latter was judged ungrammatical by over 50%. Nevertheless, the average of the NO judgments of Groups A, B, and C remains under 40%. This, compared with the over 80% ungrammaticality found in the case of Groups D, E and F, are to our mind still sufficient to confirm the claim found in the literature that the English order, the partial roll-up and the full roll-up are significantly better than the other three orders. It remains to be seen whether the relative preference among these orders is really significant.

Let us now concentrate on the different sentences within each group. Table 1 shows the breakdown of the results. Each row corresponds to one sentence, while the columns indicate the number of YES/NO/MAYBE judgments given to these sentences.

The three sentences in each group contained different verbs. Each verb quadruplet was tested in all six possible orders. The sentences also differed in

Table 1. Breakdown of results from Figure 1

SENTENCES FROM Q4		YES	NO	MAYBE
A	S30	2	11	11
	S25+	4	13	7
	S10	14	4	6
B	S20	19	3	2
	S5+	9	11	4
	S3	15	0	9
C	S26	10	9	6
	S13+	1	17	5
	S28	2	14	8
D	S8*	1	21	2
	S18	0	23	1
	S33	0	20	4
E	S1*	5	14	5
	S21	0	24	0
	S22	0	23	1
F	S14*	4	15	5
	S31	0	23	1
	S15	1	22	1

* S1, S14 and S8 may have been influenced by the lexical property of the verbs involved.

+ S5, S13 and S25 received low scores in their respective groups. This may be due to the fact that they involve particle verbs and additional material in the lowest VP.

two other respects. Some examples contained additional material in the lowest VP, which is unaffected by the roll-up (S13, S18, S21, S25, S31). In the same examples the lowest verb was a particle verb. As shown in Table 1, neither of these differences seem relevant for the ordering of the verbs.

S1 and S14 were judged YES and MAYBE more often than their group-mates. This might be the result of an intervening factor caused by the lexical property of the verbs involved. The intended (underlying) order was 'to go to learn to swim'. An alternative (underlying) order 'to learn to go to swim' is semantically well-formed, though pragmatically rather odd. Under the intended reading S1 and S14 would involve roll up of an English order sequence and long roll-up, respectively. Under the non-intended, but possible, interpretation, the examples would involve partial roll-up and full roll-up, respectively. This might be the reason why S1 and S14 are judged better than the other examples in their respective groups. As Michael Bródy (p.c.) pointed out, this reasoning, however, seems to break down, when confronted with S8, as here the non-intended underlying order does not seem to improve the result.

In the English order, Group A, two out of the three examples (S25 and S30) were judged surprisingly bad. The third one (S10) had the judgment 58% YES /

17% NO / 25% MAYBE, which roughly matches the pattern of the average of the judgments given for the sentences with partial roll-up (Group B): 60% YES / 20% NO / 20% MAYBE.

Within Group B itself, which is the best order overall, S5 was judged much worse than the other two sentences. This may suggest that there was something independently wrong with the sentences S25, S5 and S13, marked by + in Table 1. Possibly, because the lowest verb in S25, S5 and S13 is a particle verb or because they also contain other material within the lowest VP. This would explain why S25 and S13 are unexpectedly bad. Nevertheless, it would still remain a mystery why S30 and S28 are bad as well.

On the whole, we doubt that any further conclusions can be drawn from the results other than that overall they support the judgments available in the literature. In a non-neutral sentence with a four-verb verbal cluster the English order, the partial roll-up and the full roll-up are grammatical, though various (sometimes unknown) factors may intervene to diminish grammaticality. In contrast, roll-up from the middle, roll-up of an English order sequence and long roll-up are ungrammatical.

3. Particle climbing

Bródy (1997, this volume), É. Kiss (1998, 1999, this volume) and Koopman and Szabolcsi (2000) argue that in neutral sentences (those that do not involve a contrastive focus or negation), the lowest verb, or its particle or other verbal modifier if it has any, moves to a position immediately preceding the finite verb, V_1 . This phenomenon is known as particle climbing (4a). It is also generally accepted that if a focused constituent appears in the finite clause, then climbing to the position immediately preceding the finite verb is blocked (4b).

- (4) a. $PV_3-V_1-V_2-V_3$ PARTICLE CLIMBING
Haza_i fog akarni jönni_i.
 home will want-INF come-INF
 'He will want to come home.'
- b. * $FOC-PV_3-V_1-V_2-V_3$ FOCUSING BLOCKS PARTICLE CLIMBING
 **MOST haza_i fog akarni jönni_i.*
 now home will want-INF come-INF
 'He will want to come home now.'

There seems to be less agreement, however, with respect to the possibility of what one might call partial climbing, where a focused constituent appears in front of the finite verb, but there is nevertheless particle climbing to a lower position. (5a) is

an example of partial climbing to the position immediately preceding the highest infinitival verb. (5b) illustrates ‘partially partial climbing’, where the particle shows up in an intermediate position.

- (5) a. FOC-V₁-PV₄-V₂-V₃-V₄ PARTIAL CLIMBING
 ... *csak most fognak be tudni próbálni mászni a*
 ... only now will-3PL into-PV can-INF try-INF climb-INF the
barlangba.
 cave-into
 ‘It’s only now that they will be able to try to climb into the cave.’
- b. FOC-V₁-V₂-PV₄-V₃-V₄ PARTIALLY PARTIAL CLIMBING
 Az *első óra után, általában...*
 the first lesson after normally...
 ... *csak egy pár szót szokott kelleni meg*
 ... only a couple words-ACC HABIT-AUX must-INF PERF-PV
tudni érteni.
 can-INF understand-INF
 ‘After the first lesson, normally, one is supposed to be able to understand only A FEW words.’

In Question 2, another multiple choice question, we tested partial climbing in three-verb clusters (S3, S4, S7 and S10) and partial climbing and partially-partial climbing in four-verb clusters.³ With regards to the four-verb clusters, the results of this study proved to be inconclusive and partially flawed, so a follow-up questionnaire was designed to clarify the issues. In the follow-up questionnaire the following were tested: climbing in four-verb clusters (I12, I6); partial climbing in four-verb clusters (I10, I3) and partially partial climbing in four-verb clusters (I1, I18). In addition, two types of controls were included: sentences involving no climbing with four verbs (I16, I14) and sentences involving no climbing with three verbs (I8, I5). It was observed in the results of the first questionnaire that the transparent vs. non-transparent nature of the particle verb is an important factor. To control for this, we included two items in each category: one with a transparent particle verb, such as *be + mászni* ‘into-climb’ i.e. ‘climb into’, as given in (5a); and one with a non-transparent particle verb, such as *meg+érteni* ‘PERF+understand’ i.e. ‘understand (perf.)’, as given in (5b). Finally, habituation and repetition were counterbalanced by the insertion of eight grammatical and ungrammatical filler sentences. One such filler is I9, which we expected to be judged fully grammatical. It is included in the diagrams to help provide the reader with a “baseline” for the judgments. The data from Question 2 is given in (6).

(6) DATA FROM QUESTION 2 AND FOLLOW-UP QUESTIONNAIRE

Group AFOC-V₁-PV₄-V₂-V₃-V₄ PARTIAL CLIMBING WITH FOUR VERBS

I10 (4ptr)

Már egy órája ide értek a tűzoltók és...

already an hour here-to arrived the firemen and...

*...csak most fognak be tudni próbálni mászni a**...only now will-3PL into-PV can-INF try-INF climb-INF the barlangba.*

cave-into

‘It’s been an hour since the firemen arrived and it is only NOW that they will be able to try to climb into the cave.’

I3 (4pnt)

Igaz, hogy Kováts rendkívüli nyelvtanár, de azért ez
true that K exceptional language teacher but still this*túlzás. Az első óra után, általában...*

excessive the first lesson after normally...

*...csak egy pár szót szokott meg kelleni**...only a couple words-ACC HABIT-AUX PERF-PV must-INF**tudni érteni.*

can-INF understand-INF

‘It’s true that Kovats is an exceptional language teacher. But still, this is too much! After the first lesson, normally, one is supposed to be able to understand only A FEW WORDS.’

FOC-V₁-V₂-PV₄-V₃-V₄ PARTIALLY PARTIAL CLIMBING

I1 (4pptr)

Már egy órája ide értek a tűzoltók és...

already an hour here-to arrived the firemen and...

*...csak most fognak tudni be próbálni mászni a**...only now will-3PL can-INF into-PV try-INF climb-INF the barlangba.*

cave-into

‘It’s been an hour since the firemen arrived and it is only NOW that they will be able to try to climb into the cave.’

I18 (4ppnt)

*Igaz, hogy Kováts rendkívüli nyelvtanár, de azért ez
 true that K exceptional language teacher but still this
 túlzás. Az első óra után, általában...
 excessive the first lesson after normally...
 ...csak egy pár szót szokott kelleni meg
 ...only a couple words-ACC HABIT-AUX must-INF PERF-PV
 tudni érteni.*

can-INF understand-INF

‘It’s true that Kovats is an exceptional language teacher. But still, this is too much! After the first lesson, normally, one is supposed to be able to understand only A FEW WORDS.’

Group B

FOC-V₁-PV₃-V₂-V₃ PARTIAL CLIMBING WITH THREE VERBS

S3 (3ptr)

*Csak reggel fogok haza; akarni jönni;
 only morning will home want-INF come-INF
 ‘I will only want to come home in the MORNING.’*

S4 (3ptr)

*Nem ma, hanem holnap reggel fog oda; kelleni
 not today rather tomorrow morning will PV must-INF
 menni;
 go-INF*

‘It’s not this morning, but rather TOMORROW morning that one must go there.’

S7 (3ptr)

*Figyelj! Most fogja szét; kezdeni fűrészelni; a bűvész a
 look-IMP now will PV start-INF saw-INF the illusionist the
 nőt.*

woman-ACC

‘Look! The illusionist will start sawing the woman into to two now.’

S10 (3ptr)

Nem keddenként, hanem szerdánként szokott
 not Tuesdays but Wednesdays HABIT-AUX
el tudni jönni előbb a munkahelyéről.
 PV can-INF come-INF earlier the workplace-from
 'It is not on Tuesdays, rather on WEDNESDAYS that he can leave the
 office earlier.'

Group C

FOC-V₁-V₂-PV₃-V₃ NO CLIMBING WITH THREE VERBS

I8 (3notr)

Nem ma, hanem holnap reggel fog kelleni oda
 not today rather tomorrow morning will must-INF PV
menni.
 go-INF
 'It's not this morning, but rather TOMORROW morning that one must
 go there.'

I5 (3nont)

Nyugodtan el mehetsz vele söroözni.
 calmly PV can.go-2SG him-with beer.drink-INF
Nem szokott akarni be rúgni.
 not HABIT-AUX want-INF PV kick-INF
 'Don't worry, you can go and have beers with him.
 He usually doesn't want to get drunk.'

FOC-V₁-V₂-V₃-PV₄-V₄ NO CLIMBING WITH FOUR VERBS

I16 (4notr)

Már egy órája ide értek a tűzoltók és...
 already an hour here-to arrived the firemen and...
...csak most fognak tudni próbálni be mászni a
 ...only now will-3PL can-INF try-INF into-PV climb-INF the
barlangba.
 cave-into
 'It's been an hour since the firemen arrived and it is only NOW that
 they will be able to try to climb into the cave.'

I14 (4nont)

Igaz, hogy Kovács rendkívüli nyelvtanár, de azért ez
 true that K exceptional language teacher but still this
túlzás. Az első óra után, általában...
 excessive the first lesson after normally...
...csak egy pár szót szokott kelleni tudni
 ...only a couple words-ACC HABIT-AUX must-INF can-INF
meg érteni.
 PERF-PV understand-INF
 'It's true that Kovács is an exceptional language teacher. But still, this
 is too much! After the first lesson, normally, one is supposed to be
 able to understand only A FEW words.'

Remaining sentences

PV₄-V₁-V₂-V₃-V₄ CLIMBING WITH FOUR VERBS

I12 (4cltr)

Szerintem végülis be fognak tudni próbálni mászni
 I.think finally into-PV will-3PL can-INF try-INF climb-INF
a barlangba a tűzoltók, csak még egy kicsit várni
 the cave-into the firemen only yet a little-ACC wait-INF
kell.
 must
 'I think sooner or later the firemen are going to be able to try to climb
 into the cave. We just have to wait a little more.'

I6 (4clnt)

A tanárom szerint egy-két szót már az első
 the teacher-1SG thinks one-two word-ACC already the first
angolóra után is meg fog kelleni tudni
 English.lesson after even PERF-PV will must-INF can-INF
érteni.
 understand-INF
 'My teacher thinks that one must be able to understand a couple of
 words even after the first English lesson.'

FILLER

I9 (filler)

Pál le lőtte tegnap a feleségét.
 P down-PV shot yesterday the wife-3SG-ACC
 'Pál shot his wife yesterday.'

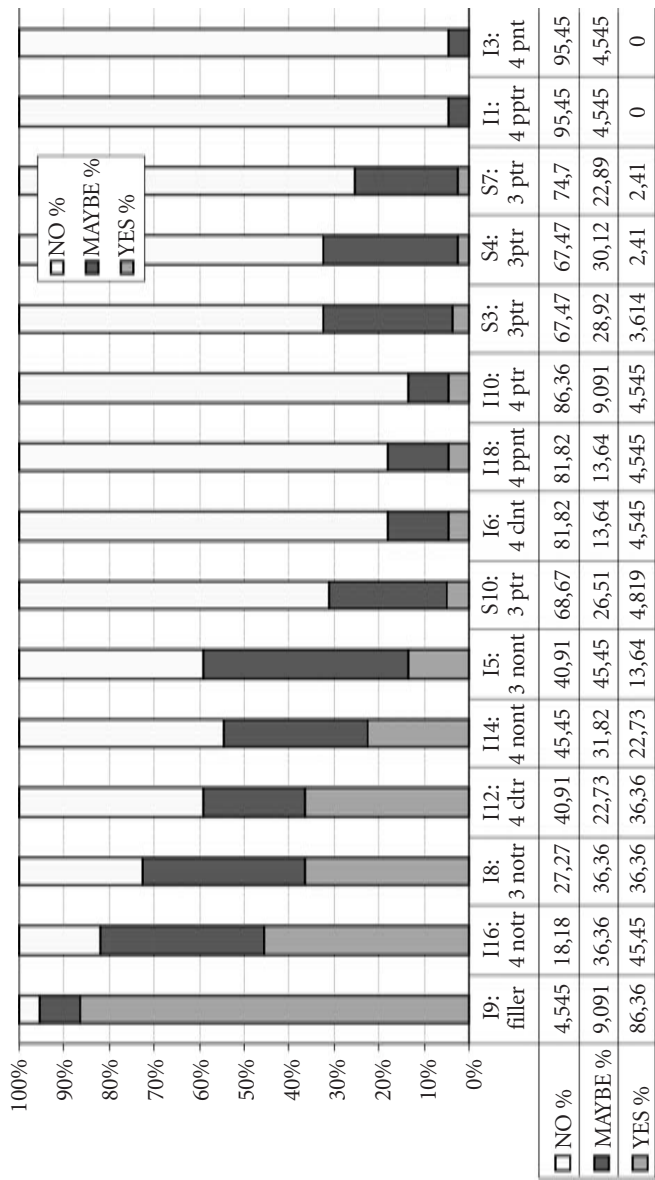


Figure 2. Particle climbing – overall results

The results of Question 2 are shown in Figure 2.⁴ The horizontal axis shows the sentences, and the vertical axis shows the percentage of the YES/MAYBE/NO judgments given to each sentence. Since the results are a conflation of two separate questionnaires, they are given in percentages rather than number of judgments.⁵ On the basis of the combined YES+NO judgments in the results, we concluded that three groups of sentences can be formed based on the acceptability patterns. Group A contains sentences involving four-verb clusters with partial climbing and partially partial climbing (I1, I3, I10 and I18). Group B contains sentences involving three-verb clusters with partial climbing (S4, S3, S10 and S7). Group C contains the control sentences (I5, I8, I14 and I16), i.e. three- and four-verb clusters without climbing. The remaining two items I6 and I12, which involve four-verb clusters with climbing are discussed separately.

Figure 3 shows the patterns of the judgments for each group. The groups are given on the horizontal axis, and the vertical axis shows, in percentages, the average of the judgments given for the sentences in that group.

Group A has a judgment pattern with 90% NO. This shows that in the case of four-verb clusters, partial climbing as well as partially partial climbing is ungrammatical for almost all speakers. Group C, the control group, received approximately 33% no judgments. Thus, there is an approximately 60% difference in the amount of no judgments between Group A and Group C. Within Group A, the difference between the results for the sentences with partial climbing (I10 and I3) and the ones with partially partial climbing (I1 and I18), given in Figure 4 overleaf, is less than 2%, which is clearly not significant.

In Group B, which involved three-verb clusters, the no judgments given for partial climbing were 20% less than in the case of four-verb clusters. (Compare the second and first columns in Figure 3.) Even though the improvement is marginal,

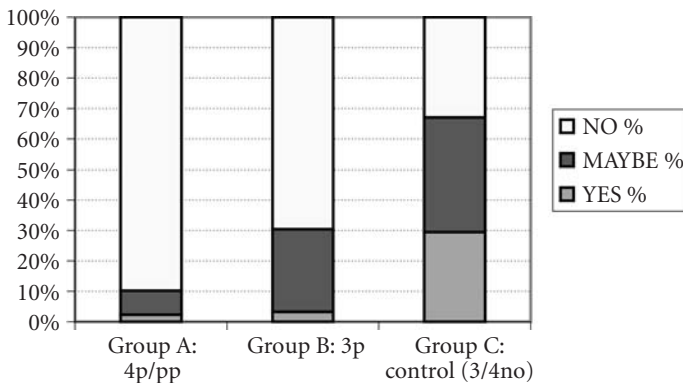


Figure 3. Particle climbing patterns

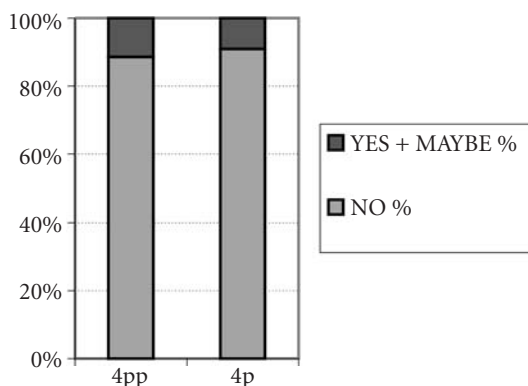


Figure 4. Four verb clusters with partial vs. partially partial climbing

since the YES judgments were almost identical in Group B and Group A (i.e. 2,3% and 3,3% respectively), we formulated two hypotheses to try to explain the fact that about 20% of the speakers find partial climbing in three-verb clusters MAYBE acceptable while they find the same structure in four-verb clusters unacceptable. Both hypotheses were tested in the follow-up questionnaire and we would like to speculate that the second is more revealing, although neither of them turns out to provide a satisfactory explanation for this fact.

First, it could be the case that partial climbing in four-verb clusters is worse than in three-verb clusters, because four-verb clusters are worse than three-verb clusters in general. To test this we included both three- and four-verb clusters in our control group (Group C). The hypothesis would have been supported if there were a similar difference in acceptability between three- and four-verb clusters in Group C as there is between Group A and Group B. As Figure 5 reveals, there was no significant difference in the NO judgment given to three- and four-verb clusters in sentences without climbing, which suggests that a different explanation must be sought to explain the improved judgments in Group B.

Second, since all the partial climbing sentences with three verbs involved transparent particle verbs, while the ones with four verbs did not, it could be the case that the nature of the particle verb influenced the results. To clarify this issue, in the follow-up experiment we included four-verb clusters with transparent particle verbs and also ones with non-transparent particle verbs (Group A). The second hypothesis would have been supported, if a similar improvement in judgments had been observed with respect to four-verb clusters involving transparent particle verbs, compared to four-verb clusters with non-transparent particle verbs. As Figure 6 shows, there was no significant difference between the acceptability of four-

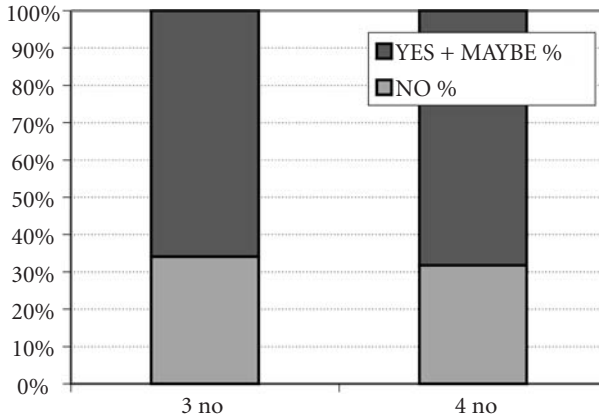


Figure 5. Comparison of three- and four-verb clusters without climbing

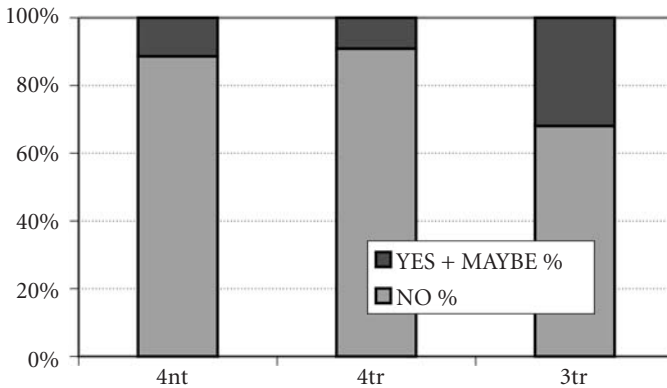


Figure 6. Partial and partially climbing including transparent (tr) and non-transparent (nt) particle verbs

verb clusters with partial (or partially partial) climbing depending on the nature of the particle verb. So, the hypothesis was not supported by the data.

We would like to summarize the discussion by stating the observation that partial climbing is slightly better in three-verb clusters, than it is in four-verb clusters, at least with transparent particle verbs. To be precise, one fifth of the speakers finds partial climbing in three-verb clusters *MAY BE* acceptable, while they do not find partial climbing in four-verb clusters acceptable at all. This difference is not due to the idea that three-verb clusters are generally more acceptable than four-verb clusters, as our controls did not reveal such a difference (see Figure 5). A difference in the transparent vs. nontransparent nature of the particle verb does not explain

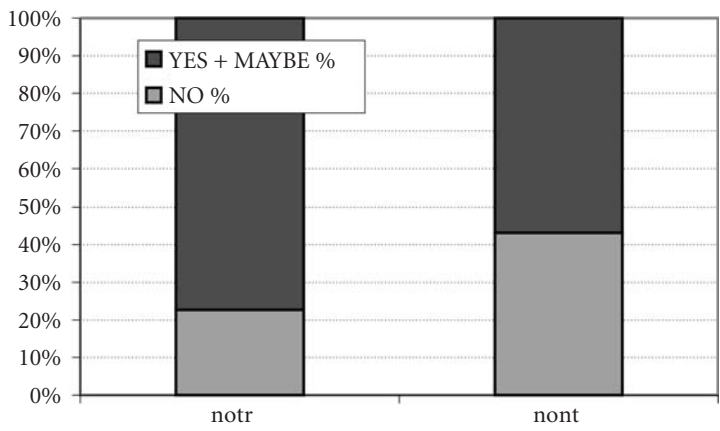


Figure 7. Comparison of transparent (tr) and non-transparent (nt) verbal particles in verbal clusters without climbing

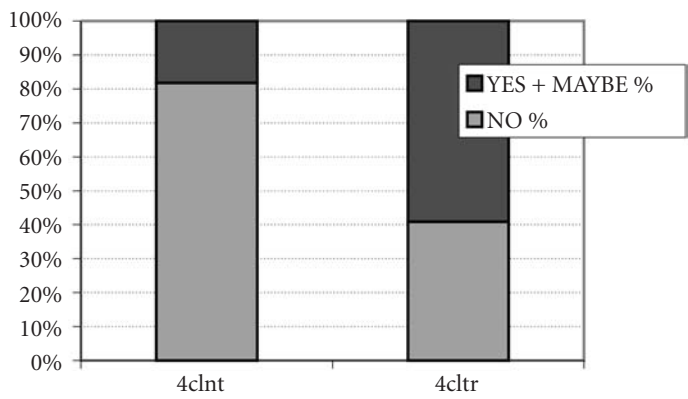


Figure 8. Comparison of transparent (tr) vs. non-transparent particle (nt) in climbing in four-verb clusters

the data either (see Figure 6). So we conclude that an explanation for the slight improvement in judgments for partial climbing is still lacking.

Note that the nature of the particle verb seems relevant in other cases. First, as Figure 7 reveals, the control sentences with transparent particle verbs received approximately 20% less no judgments compared to control sentences with non-transparent particle verbs.

Second, our results of the data involving climbing in four-verb clusters, show that climbing is highly sensitive to the nature of the particle verb. As we can see in Figure 8, I12, which involves climbing in a four-verb cluster with a transparent

particle verb (4cltr), patterns with data from Group C, the control group. (I12 is the fourth column from the left in Figure 2.) In contrast, I6, which involves climbing of a non-transparent particle (4clnt), patterns with Group A. (I6 is the eighth column from the left in Figure 2.) In other words, climbing with non-transparent particles is judged as bad as partial or partially-partial climbing. This means that the difference between the no judgments in the two cases was over 40%. We know of no theory that explains this significant result.

Some additional results follow if one takes a closer look at the sentences. The two verbs used in most of these examples as finite verbs are *fog* 'will' and *szokott* 'do habitually'. Comparing the results of sentence pairs from each group, one involving *fog* 'will', the other involving *szokott* 'do habitually' (e.g. S5 to S9, I1 to I18, I3 to I10, S4 to S10) does not reveal any systematic difference. This suggests that the choice of the finite verb does not effect the results. This is in line with Kenesei's (2000) claim that *fog* 'will' and *szokott* 'do habitually' are uncontested auxiliary verbs in Hungarian.

The following diagrams (Figures 9a, 9b and 9c) show the breakdown of the results of the first questionnaire for those counties that had more than 5 speakers. We do not think that smaller samples would be reliable indicators of any dialectal variation. As it is transparent from the diagrams, we did not find any indication of dialectal variation in the judgments obtained for the first questionnaire. This may support the view, generally held among Hungarian linguists, that the Hungarian verbal cluster is different from its Germanic counterparts in the sense that it is a much more unified phenomenon that is subject to much less cross-dialectal variation.

However, as the data in Figure 10 reveals, there seems to be a general negativity towards constructions involving verbal clusters in the area around Szeged. This

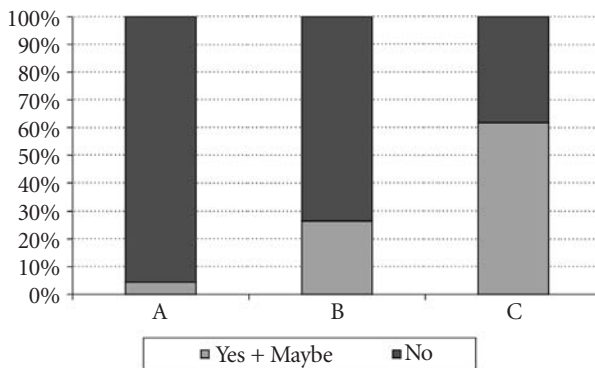


Figure 9a. Particle climbing patterns (Pest county)

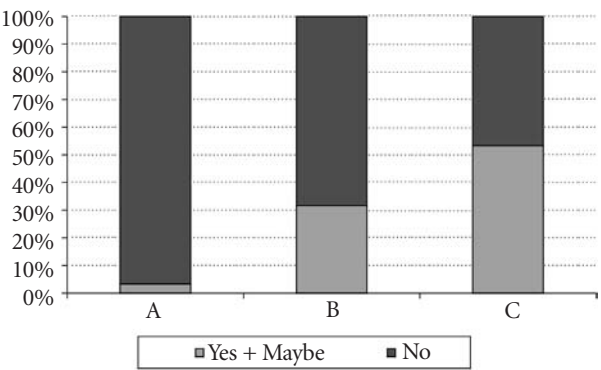


Figure 9b. Particle climbing patterns (Baranya county)

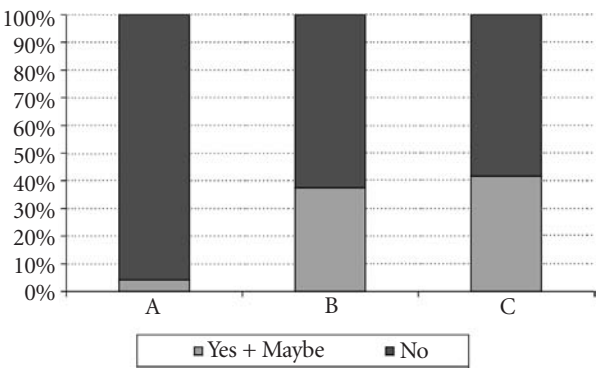


Figure 9c. Particle climbing patterns (Fejér county)

data was obtained in the follow-up questionnaire.⁶ Speakers in this area do not find three- and four-verb clusters grammatical, even if they involve no climbing (3/4no), or full climbing (4cl). Note that the educational background, or linguistic training was not different here from the other groups. Although these findings point to some dialectal variation, it is of the less interesting type as it shows the overall aversion towards verbal clusters, rather than a preference for certain word-order variants as is often the case in the Germanic dialects.

To sum up, we would like to stress that the findings are far from conclusive, since the samples are rather small and also because a large majority of the speakers tested received higher education, which is known to have a neutralizing effect on dialectal variation. A more extensive sociolinguistic study would have to be conducted to reveal any dialectal variation in the possible orderings of the Hungarian verbal cluster.

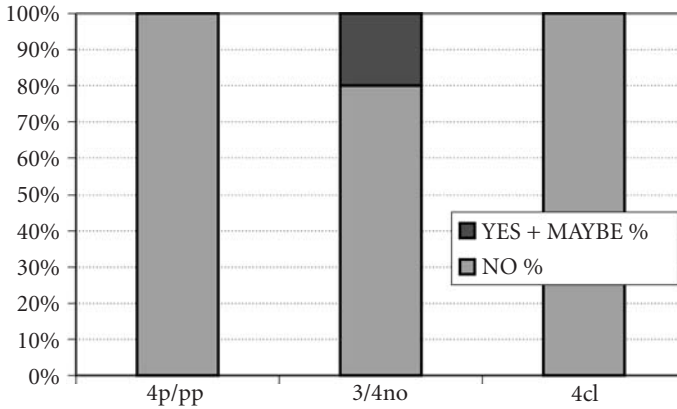


Figure 10. Particle climbing patterns (Csongrád county)

4. *Látszik* ‘seem’ – a stress-avoiding verb that does not trigger particle climbing

The aim of Question 3 was to establish the characteristics of the Hungarian verb *látszik* ‘seem’. Kálmán et al. (1989) argue that Hungarian verbs that take infinitival complements fall into several classes. Two of these classes are the stress-avoiding verbs and the stress-requiring verbs. As the names suggest, stress-avoiding verbs cannot be stressed in a neutral sentence. If they are stressed, the stress is interpreted in a non-neutral way (e.g. involving contrast). Stress-requiring verbs take neutral stress. Bródy (1997), É. Kiss (1999) and Koopman and Szabolcsi (2000) argued that this classification of infinitival complement taking verbs is relevant for climbing and roll-up formation, as stress-avoiding verbs exhibit climbing in neutral sentences and take part in roll-up constructions in non-neutral sentences, while stress-requiring verbs block climbing and roll-up formation.

Although we agree with this characterization of the data, we would like to suggest that it needs certain refinements.⁷ It is true that stress-requiring verbs block both climbing and roll-up, but it seems to be the case that not all stress-avoiding verbs allow both climbing and roll-up formation. In particular, we would like to suggest on the basis of the results of Question 3, which are fully compatible with our own judgments, that the verb *látszik* ‘seem’ is a stress-avoiding verb that does not allow particle climbing. It does, nevertheless, take part in roll-up structures.

Question 3 was a fill-in question. It involved unfinished sentences with some material missing and the speakers were asked to fill in the missing material. It was shown on the questionnaire where the missing material was to go and fully inflected words were given below each sentence in alphabetical order. The speakers

were told that they are only allowed to use the words given and not allowed to alter the sentence in any other way.⁸

The speakers gave the answers in (7) to S3 and S7. In the case of S3 100% of the speakers gave the order in S3a. In the case of S7, 91% of the speakers gave the order in S7a, 2% of the speakers (i.e., one speaker) gave the order in S7b, while 5% of the speakers (i.e., three speakers) wrote that no order is possible. We take these results to indicate that *látszik* ‘seem’ is a stress-avoiding verb. This is because the orders **látszik csökkenni* ‘seems to diminish’ and **látszik hajnalodni* ‘seems to be dawning’, where main stress would fall on the finite verb *látszik* ‘seem’ were not given as grammatical orders.

- (7) S3 *A sajtó nyomására a városban a rendőri jelenlét.*
 the media pressing-on the city-in the police presence
(csökkenni, látszik)
 diminish-INF seems
 ‘As a result of pressure from the media, the police presence in the city
 seems to diminish.’
 a. *csökkenni látszik* INVERSION: 100%
 decrease-INF seems
- S7 – *mondta Péter s mélyet sóhajtott. (hajnalodni,*
 said Peter and deep-ACC breathed dawn-INF
látszik)
 seems
 ‘“It seems to be dawning,” Peter said, taking a deep breath.’
 a. *hajnalodni látszik* INVERSION: 91%
 dawn-INF seems
 ‘seems to be dawning’
 b. *látszik hajnalodni* STRAIGHT ORDER: 2%
 seems dawn-INF
 ‘seems to be dawning’

The results of S5 and S9 are given in (8).

- (8) S5 *Valami az ablakon. Mari először megijedt, de*
 something the window-on Mary first was.scared but
aztán látta, hogy csak egy cserebogár. (be, látszott, repülni)
 then saw that only a beetle in seemed fly-INF
 ‘Something seemed to fly in through the window. Mary was fright-
 ened at first, but then she saw that it was only a beetle.’
 a. *be repülni látszott* INVERSION: 63%
 PV fly-INF seemed
 ‘seemed to fly in’

- b. *látszott be repülni* STRAIGHT ORDER: 18%
 seemed PV fly-INF
 'seemed to fly in'
- c. *be látszott repülni* PARTICLE CLIMBING: 16%
 PV seemed fly-INF
 'seemed to fly in'
- S9 A *távolban egy fehér vitorla. (ki, látszik,*
 the distance-in a white sail PV seems
rajzolódni)
 be.drawn-INF
 'In the distance the shape of a white sail seems to emerge from
 the background.'
- a. *ki rajzolódni látszik* INVERSION: 86%
 PV be.drawn-INF seems
 'seems to emerge from the background'
- b. *látszik ki rajzolódni* STRAIGHT ORDER: 16%
 seems PV be.drawn-INF
 'seems to emerge from the background'
- c. *ki látszik rajzolódni* PARTICLE CLIMBING: 2%
 PV seems be.drawn-INF
 'seems to emerge from the background'

In the case of S5, the order that involves particle climbing, S5c was given in 16% of the cases. In the case of S9, S9c, the order that involves particle climbing was given in 2% of the cases (i.e., one speaker). We would like to suggest that these results show that *látszik* 'seems' does not allow climbing of the particle of its complement verb. Note that the particle verb in S5 is more or less compositional, while the one in S9 is more idiomatic. This might be the reason why particle climbing in S9 is judged grammatical by more speakers.⁹

The best order in both S5 and S9 is the one that involves an inverted order between the finite verb and its infinitival complement, in other words a roll-up structure. This order was given in 63% of the cases for S5, and 86% of the cases for S9. This is also the order given in 100% of the cases for S3 and in 91% of the cases for S7. This suggests that with *látszik* 'seems', a roll-up is formed in all cases, irrespective of whether the complement verb is a simple infinitive or a particle verb.

Finally, the results of S1 are given in (9).

- (9) S1 A *kormány* a *nyugdíjak ügyében*.
the government the pensions issue-in
(*belátásra*, *látszik*, *térni*)
consideration-onto seems arrive-INF
'The government seems to be persuaded in the issue of pensions.'
- a. *belátásra* *látszik* *térni*
consideration-on seems arrive-INF
BARE NOUN FRONTING/CLIMBING?: 80%
'seems to be persuaded'
- b. *belátásra* *térni* *látszik* INVERSION: 9%
consideration-on arrive-INF seems
'seems to be persuaded'

The best order for S1 was the one in S1a, which involves fronting of the bare noun. This could be a case of climbing, but it could just as well be a case of focusing of the incorporated oblique argument. It is well known that stress-avoiding verbs do not exhibit climbing in non-neutral sentences where a focused phrase appears immediately preceding them. Given that an incorporated oblique argument has ample semantic and pragmatic content, it is easily focused. Unfortunately, due to the method used in this survey we cannot take a stand with regards to the focused nature of the bare noun. More tests are needed to control for the possible effects of focusing. Nevertheless, we would like to conclude that the results of Question 3 support a position that argues that *látszik* 'seem' is a stress-avoiding verb that does not exhibit particle climbing. (It may exhibit climbing of incorporated oblique arguments.) The majority of speakers use a roll-up structure in neutral sentences with *látszik* 'seem'.

5. Conclusion

We reported partial results of a questionnaire survey on the Hungarian verbal cluster. We would like to stress, however, that in our minds the results do not constitute conclusive evidence. We merely regard them as an indicator of the state of affairs. A questionnaire survey, as any experimental design, has its own built-in flaws which may distort the results significantly. We are also fully aware of the lack of expertise on our part for trying to counterbalance these intervening factors. For concreteness' sake, if there existed a dialect of Hungarian that allows partial climbing, or roll-up from the middle whose speakers constitute roughly 10% of the population, on the basis of our estimate of the noise in our results, we reckon that our results would not indicate the existence of this dialect.

In this light, we tentatively conclude that the initial results support the dominant view in the literature that certain orders in the Hungarian verbal cluster are ungrammatical. In particular, the results of Question 4 support the view that in non-neutral sentences roll-up formation is constrained in such a way that (i) it cannot start from the middle, (ii) it cannot effect English order sequences, and (iii) it cannot invert nonadjacent verbs. The results of Question 2 and the follow up questionnaire do not indicate any dialectal variation in the case of partial climbing (or partially partial climbing), they are uniformly ungrammatical. The results of Question 3 lend support to our own view that the class of verbs that allow particle climbing and the class of those verbs that allow roll-up formation are not identical. In particular, *látszik* 'seem' takes part in roll-up formation, even in neutral sentences, but does not allow particle climbing. Finally, the survey uncovered a hitherto unnoticed fact about particle climbing: at least in the case of four-verb clusters and in the context of verbs such as *látszik* 'seem', which are reluctant to trigger climbing, speakers tend to not allow climbing unless the particle-verb is semantically compositional.

Notes

* Thanks are due to Henk van Riemsdijk for suggesting the idea of conducting a questionnaire survey about the possible orders of the verbal cluster in Hungarian, for Susi Wurmbrand for providing the questionnaire that she used to conduct a survey in the Germanic dialects, and for Katalin É. Kiss for useful comments on the first draft. Thanks are also due for helpful comments and questions to the audience of the Workshop on Verbal Clusters held on 14–18 June 2001 in Pécs, Hungary. Finally, we would like to thank the people who filled in our questionnaires for the time and effort they put in.

1. We proposed in Szendrői and Tóth (1999) that the generalization breaks down in the other direction as well. In particular, there are verbs, such as *kell* 'must' that trigger particle climbing in neutral sentences (i), but do not take part in roll-up formation in non-neutral sentences (ii-b).

- (i) *Oda kell menni.*
 there must go-INF
 'We must go there.'
- (ii) a. *Pétert fog kelleni oda vinni.*
 Peter-ACC will must-INF there take-INF
 'Peter will have to be taken there.'
- b. **Pétert fog oda vinni kelleni.*
 Peter-ACC will there take-INF must-INF
 'Peter will have to be taken there.'

2. Only the questionnaires from Budapest were evaluated for Question 4, i.e., altogether 24 questionnaires.

3. It is impossible to test partially partial climbing in three-verb clusters, as there are not enough positions.
4. Notation in Figure 2: '3' and '4' refer to the number of verbs in the cluster. 'no' means no particle climbing; 'cl' means particle climbing targeting the position in front of the finite verb; 'p' means partial climbing to the position following the finite verb; 'pp' means partially partial climbing targeting the position between V_2 and V_3 ; 'tr' means the particle verb is transparent; 'nt' means the particle verb is non-transparent. 'I' means Item and refers to the test items in the second questionnaire. 'S' means Sentence and refers to the test items in the first questionnaire.
5. A table is given in the Appendix showing the number of YES/NO/MAYBE judgments for each sentence. All 83 questionnaires were evaluated for Question 2. The second questionnaire was evaluated for 22 persons. More data about the subjects is given in the Appendix.
6. The first questionnaire survey did not include enough speakers from this area to reveal the dialectal difference.
7. See also Koopman and Szabolcsi (2000: fn. 7) for the same claim.
8. The breakdown of the results for each sentence is given in the Appendix. A sample of 56 questionnaires was evaluated for Question 3, from all over the country.
9. Recall that the same sensitivity towards the compositional nature of the particle-verb construction was uncovered by the follow-up questionnaire reported in Section 3.

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Appendix

I SURVEY 1

1 BREAKDOWN WITH RESPECT TO COUNTIES:

Table 2. The origin of the questionnaires

Number of questionnaires	From . . .
33	Budapest and Pest county
15	Baranya
6	Fejér
5	Nógrád
4	Jász
4	Somogy
4	Szabolcs-Szatmár
4	Tolna
8	other (e.g. Heves, Vas, Zala, Borsod-Abaúj-Zemplén, Komárom, Bács-Kiskun, Győr-Sopron, unspecified)

In Table 2 the breakdown of the total of 83 questionnaires is given for each county. No sampling technique was applied to ensure that we get a representative sample of judgments from all around the country.

2 QUESTION 2

Table 3. Breakdown of the results from Question 2

Sentences from Q2		YES	NO	MAYBE
A	S1	0	81	2
	S2	0	81	1
	S6	0	78	5
	S8	1	78	4
B	S3	3	56	24
	S4	2	56	25
	S7	2	62	19
	S10	4	57	22
C	S9	15	36	32
	S5	19	30	34

In Table 3, each row corresponds to a sentence, while the columns indicate the number of YES/NO/MAYBE judgments given to that sentence.

3 QUESTION 3

Table 4. Breakdown of the results for Question 3

S1			S3			S5			S7			S9			
a	b	Ø	a	a	b	c	Ø	a	b	Ø	a	b	c	Ø	
45	5	6	56	35	10	9	6	51	1	3	48	9	1	1	

In Table 4, the first row contains the sentences. The second row refers to the orders given for each sentence. The actual orders were given in the main text. Ø indicates that the speaker explicitly claimed that no order gives a grammatical sentence. The third row gives the number of speakers who gave that order for that sentence.

The remaining sentences S2, S4, S6, and S8 are not shown. These sentences tested the characteristics of the verb *kényszerül* ‘be.forced-INF’. The results were not possible to evaluate. The only conclusion that we could draw from the results was that for many speakers *kényszerül* ‘be forced-INF’ does not allow an infinitival complement.

II SURVEY 2

1 BREAKDOWN WITH RESPECT TO COUNTIES:

Table 5. The origin of the questionnaires

Number of questionnaires	From ...
12	Budapest and Pest county
3	Baranya
3	Somogy
1 (5)	Csongrád
1	Vas
1	Szabolcs-Szatmár
1	Tolna
1	Komárom-Esztergom

23 questionnaires were evaluated for the follow-up survey. A breakdown of the origin of the speakers is given in Table 5.

Altogether 5 questionnaires were evaluated from Csongrád megye for dialectal variation. But due to the exceptionally low scores, only 1 was included in the overall computation of results.

III THE QUESTIONNAIRES

I THE FIRST QUESTIONNAIRE

Kedves Hölgem! Kedves Uram!

Mi egy nyelvészeti tárgyú felmérést végzünk. Ez ügyben kérnénk az Ön segítségét. Olyan magyar mondatokat vizsgálunk, amelyek több igét is tartalmaznak, mint például: “Péter mielőbb fel *akarja adni* a levelet.” A felmérés célja megállapítani, hogy az ilyen mondatok milyen különböző szórenddel fordulnak elő az egyes beszélőknél, és feltárni az esetleges különbségeket a különböző földrajzi helyről származó beszélők nyelvhasználatára között. Ez a felmérés egy nagyobb projektum részét képezi, amely többek között német és holland nyelven vizsgálja a több igét is tartalmazó mondatok szórendi sajátosságait. A felmérés eredményét természetesen minden további nélkül az Ön rendelkezésére bocsátjuk. Szeretnénk hangsúlyozni, hogy a kérdőív kitöltésével nagyban hozzájárulna a felmérés alaposságához. Éppen ezért kérjük, hogy amennyiben csak részlegesen töltene ki a kérdőívet, akkor is feltétlenül küldje el, mert így is nagyon sokat segít nekünk az adatok összegyűjtésében. Előre is nagyon köszönjük fáradozását.

Üdvözlettel,

Szendrói Kriszta, Tóth Ildikó és Susi Wurmbrand

KÉRDŐÍV

Születési hely (megye):

Tartózkodási hely (megye):

[Amennyiben a lakóhely nem egyezik meg a születési hellyel]

Kérjük, adja meg hány éve lakik a jelenlegi lakhelyén:

Név (kihagyható):

Foglalkozás (kihagyható):

Legmagasabb iskolai végzettség (kihagyható):

[Amennyiben érdeklik a felmérés eredményei]

Kérjük adja meg elérhetőségét (e-mail, vagy postai cím):

Mielőtt elkezdené kitölteni a kérdőívet, fel szeretnénk hívni a figyelmét néhány apróságra. A legfontosabb, hogy a felmérés tárgya az **élő, magyar beszélt nyelv vizsgálata, úgy ahogyan azt a mindennapi életben használjuk**. A kérdések megválaszolásakor, tehát kérjük próbálja minél inkább figyelmen kívül hagyni “az iskolában tanultakat” és, hogy mit hogyan “illik” mondani. A kérdésekre nincsen “helyes válasz”. Arra vagyunk kíváncsiak, hogy Ön egy adott élethelyzetben hogyan mondaná a kérdéses mondatot. Sokszor segít például, ha megpróbálja elképzelni az adott élethelyzetet, esetleg hangosan ki is ejti a mondatot.

2. KÉRDÉS

Most arra szeretnénk kérni, hogy az alább felsorolt mondatokról mondjon véleményt. A véleményezéshez az alábbi kritériumokat javasoljuk. Ha ez Önnek valamiért nem felelne meg, kérjük, alkosson jobb kritériumokat.

Fontos, hogy nagyon figyelmesen olvassa el az egyes mondatokat, mert sokszor a legkisebb különbség is lényeges lehet.

IGEN: Ezt a mondatot én is mondanám így.

NEM: Ezt a mondatot én így nem mondanám.

TALÁN: El tudom képzelni, hogy valaki mondana ilyet, de én nem valószínű, hogy ezt tenném.

Ha véleményéhez bármilyen megjegyzést óhajt fűzni, azt nagyon szívesen vesszük. Még egyszer szeretnénk kérni, hogy próbáljon valódi beszédhelyzeteket elképzelni, és ne a “nyelvhelyességre” törekedjen. Nincsen “helyes válasz” a kérdésekre!

ADATOK	IGEN	NEM	TALÁN
Ritkán fog fel akarni járni lépni a vidéki színházakban.			
Ritkán szokott be tudni menni rúgni a többiekkel.			
Csak reggel fogok haza akarni jönni			
Nem ma, hanem holnap reggel fog oda kelleni menni			
Ritkán szokott tudni menni berúgni a többiekkel			
Ritkán fog akarni fel járni lépni a vidéki színházakban.			
Figyelj! Most fogja szét kezdeni fűrészelni a bűvész a nőt!			
Ritkán szokott tudni be menni rúgni a többiekkel.			
Ritkán fog akarni járni fellépni a vidéki színházakban			
Nem keddenként, hanem szerdánként szokott el tudni jönni előbb a munkahelyéről			

3. KÉRDÉS

Most újra arra kérnénk, hogy a mondat után megadott szavakkal fejezze be a félbehagyott mondatokat úgy, hogy azok értelmes mondatot alkossanak.

A kormány..... a nyugdíjak ügyében.

(belátásra, látszik, térni)

A miniszter egy államtitkárt, aki into-
leráns kijelentésekkel lepte meg a közvéleményt.

(kényszerült, meg, védeni)

A sajtó nyomására a városban a rendőri
jelenlét.

(csökkenni, látszik)

Akármilyen lusta is Péter, , ha elkez-
d dolgozni a Suzuki-gyárban.

(fel, fog, kelni, kényszerülni)

Valami az ablakon. Mari először meg-
ijedt, de aztán látta, hogy csak egy cserebogár.

(be, látszott, repülni)

A túszejtő a szembesítés után

(beismerő vallomást, kényszerült, tenni)

..... – mondta Péter s mélyet sóhajtott.

(hajnalodni, látszik)

Dr. Kovács bűnrészességét az olajügy-
ben.

(be, kényszerült, vallani)

A távolban egy fehér vitorla.

(ki, látszik, rajzolódni)

4. KÉRDÉS

Az utolsó feladatban újra arra kérnénk hogy véleményezze az alábbi mondatokat, a 2. feladatban megadott kritériumok alapján.

ADATOK	IGEN	NEM	TALÁN
Nem Mari, hanem Péter fog tanulni úszni járni.			
Péter keresetkiegészítésként fát vágni fog járni.			
Péter hétfőn nem ér rá. Kedden fog tudni edzeni járni.			
Ma Péter meg megy látogatni a mamáját a kórházban.			
Ritkán fog akarni fellépni járni a vidéki színházakban.			
Tudok megőrlüni ettől a folytonos csipogástól!			
Péter keresetkiegészítésként fát fog járni vágni.			
Nem Mari, hanem Péter fog tanulni járni úszni.			
A maffia megszimatolta, hogy valaki próbál beférkőzni a tagjai közé.			
Péter hétfőn nem ér rá. Kedden fog tudni járni edzeni.			
Péterke keddenként megy úszni.			
Péter meg igyekszik érteni a barátját, de néha elveszíti a türelmét.			
Ritkán fog fellépni járni akarni a vidéki színházakban.			
Nem Mari, hanem Péter fog úszni járni tanulni.			
Péter hétfőn nem ér rá. Kedden fog edzeni tudni járni.			
Péter keresetkiegészítésként fát jár vágni.			
A hírek szerint a miniszterelnök még a nyáron lemondani szándékozik hivataláról.			
Ritkán fog járni akarni fellépni a vidéki színházakban.			
A maffia megszimatolta, hogy valaki be próbál férkőzni a tagjai közé.			
Nem Mari, hanem Péter fog járni úszni tanulni.			
Ritkán fog járni fellépni akarni a vidéki színházakban.			
Péter hétfőn nem ér rá. Kedden fog járni edzeni tudni.			
Ha ilyen rossz a zár, akkor tuti, hogy valaki be fog próbálni törni.			
Péterke keddenként úszni megy			
Ritkán fog akarni járni fellépni a vidéki színházakban.			
Nem Mari, hanem Péter fog úszni tanulni járni.			
A gyerekek oda imádnak menni a nagymamáékhoz.			
Péter hétfőn nem ér rá. Kedden fog edzeni járni tudni.			
Péter keresetkiegészítésként fát vágni jár.			
Nem Mari, hanem Péter fog járni tanulni úszni.			
Ritkán fog fellépni akarni járni a vidéki színházakban.			
Péter fog teniszezni menni.			
Péter hétfőn nem ér rá. Kedden fog járni tudni edzeni.			

NAGYON SZÉPEN KÖSZÖNJÜK A SEGÍTSÉGÉT!

2 THE FOLLOW-UP QUESTIONNAIRE

Same introduction and heading as in first questionnaire.

ADATOK	IGEN	NEM	TALÁN
Már egy órája ideértek a tűzoltók és csak most fognak tudni be próbálni mászni a barlangba.			
Pál tegnap lelőtte magát.			
Igaz, hogy Kováts rendkívüli nyelvtanár, de azért ez túlzás. Az első óra után, általában csak egy pár szót szokott meg kellenni tudni érteni.			
Fogtam egy tükröt és megmutattam magát Marinak.			
Nyugodtan elmehetsz vele sörözni. Nem szokott akarni berúgni.			
A tanárom szerint egy-két szót már az első angolóra után is meg fog kellenni tudni érteni.			
János aggasztja önmagát.			
Nem ma, hanem holnap reggel fog kellenni odamenni.			
Pál lelőtte tegnap a feleségét.			
Már egy órája ideértek a tűzoltók és csak most fognak be tudni próbálni mászni a barlangba.			
Fogtam egy tükröt és megmutattam Marinak magát.			
Szerintem végülis be fognak tudni próbálni mászni a barlangba a tűzoltók, csak még egy kicsit várni kell.			
Megmutattam a tükörben magát Marinak.			
Igaz, hogy Kováts rendkívüli nyelvtanár, de azért ez túlzás. Az első óra után, általában csak egy pár szót szokott kellenni tudni megérteni.			
Megmutattam tegnap magát Marinak a tükörben.			
Már egy órája ideértek a tűzoltók és csak most fognak tudni próbálni bemászni a barlangba.			
Pál lelőtte tegnap magát.			
Igaz, hogy Kováts rendkívüli nyelvtanár, de azért ez túlzás. Az első óra után, általában csak egy pár szót szokott kellenni meg tudni érteni.			

Clustering theories*

Jonathan David Bobaljik

This paper aims only to make a few brief remarks about what seem to me to be the more salient aspects of the verb cluster puzzles. I will comment briefly and somewhat selectively on points where the verb cluster data appears to bear on differences, and hence choices, among current syntactic theories. However, most questions will be left open, and I make no attempt at exhaustivity. For a far longer and more general overview of the phenomenon within Germanic see Wurmbrand (forthcoming) in addition to the introduction to this volume.

1. Verb clusters

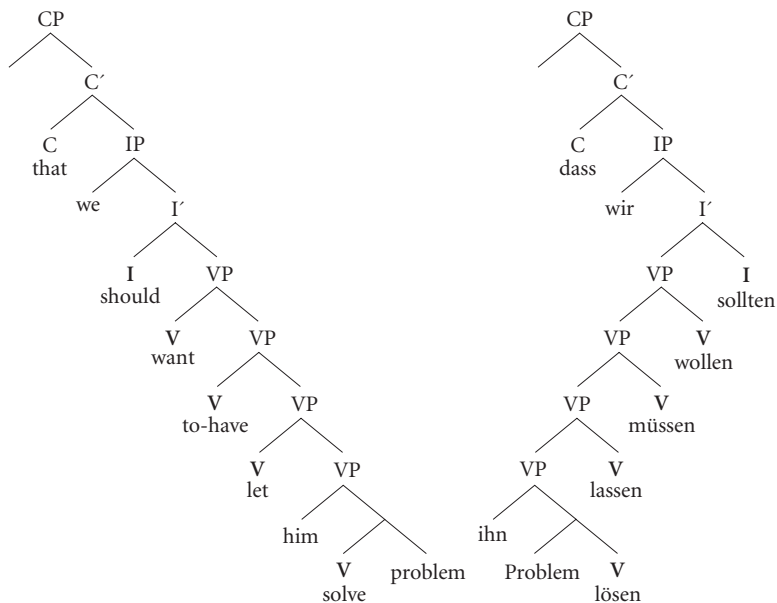
Observationally, Dutch and German are verb-final languages. Verb-second (V2) and other movements (such as extraposition) can mask this, but when these are controlled for, the verb occurs at the right periphery of its clause, following its complement(s). In the case of verbs selecting VP or clausal complements, the net effect is that the verbs “stack up” at the right, a fact which Mark Twain (1880) commented upon with great amusement. This is illustrated for German in (1), where the subscript numbers on the verbs illustrate their relative (semantic) hierarchical order (1 is the highest), and the verbs occur in the mirror-image order of their English counterparts in the paraphrase.

- (1) ...*dass wir ihn dieses Problem lösen₅ lassen₄ müssen₃ wollen₂*
...that we him this problem solve let have-to want
sollten₁
should
'that we should₁ want₂ to have to₃ let₄ him solve₅ this problem'
(van Riemsdijk 1998b:7)

Presented with these facts, the most straightforward account would model the German/English difference by positing a single, semantically-determined hierarchical

(2) a. English b. German

- b. German



(3) ...*dat wij hem dit problem zouden₁ willen₂ moeten₃ laten₄*
 ...that we him this problem should want have-to let
oplossen₅
 solve
 'that we should want to have to let him solve this problem'
 (van Riemsdijk 1998b:7)

Unlike the German example in (1) or the English paraphrases, the Dutch example in (3) displays a discontinuous dependency – the object *dit probleem* ‘this problem’

and its selecting verb do not form a constituent on the surface – all of the higher verbs intervene.

Dutch and German are no strangers of course to discontinuous dependencies on the surface. Scrambling (4a) and topicalization (4b), for example, readily create word order patterns in which the object and its selecting verb do not constitute a surface constituent, and such surface discontinuity forms the basis of the theory of movement and its analogues in other frameworks.

- (4) a. *Ohne Hilfe kann dieses Problem nur der Hans lösen.*
without help can this problem only the Hans solve
'Only Hans can solve this problem without help.'
- b. *Dieses Problem kann nur der Hans lösen.*
this problem can only the Hans solve
'Only Hans can solve this problem.'

However, the word order variation associated with well-motivated instances of syntactic (phrasal) movement typically has interpretive correlates. For example, to a first approximation, a scrambled object is interpreted as old information whereas an unscrambled object, adjacent to its selecting verb, is interpreted as new information. Once scrambling, V2 and the like are controlled for, the literature offers no systematic interpretive difference that can be attributed to the German versus Dutch difference in (1) and (3), or other examples internal to a single speech variety. In the limiting case, true optionality is reported, as in the case of clusters involving a finite verb and its non-finite complement in Dutch, as in (5).

- (5) a. *(Ik denk) dat Jan het boek gelezen heeft*
(I think) that Jan the book read has
- b. *(Ik denk) dat Jan het boek heeft gelezen*
(I think) that Jan the book has read
both: 'I think) that Jan has read the book.' (Zwart 1996:232)

Even where broadly accepted movement dependencies lack a clear interpretive correlate, as in the movement of the finite main verb to second position in a V2 clause, such instances of movement are typically robust and invariant within a speech community.

The discontinuous verb-object dependencies evidenced in examples such as (3) and (5) thus differ from canonical movement dependencies like those in (4) in that the former lack an effect on interpretation and show pervasive inter- and even intra-speaker variation (see Wurmbrand this volume). The use of the term *verb cluster* in these cases is thus an extension of other uses of the term *cluster* in the generative literature (see especially Bonet 1991 on Romance *clitic clusters*), referring basically to discontinuous dependencies in which the familiar motivations

or diagnostics for movement are not obviously attested, i.e., strings of similar elements in which the surface order departs from what simple rules of precedence will derive from the semantically motivated structure.

How are the verb cluster phenomena to be accommodated within a constrained theory? There are broadly speaking three possibilities instantiated among the contributions to this volume.

First, there are what we might call *inheritance* approaches. These approaches accept that the surface constituency is that indicated by the word order, i.e., that the object *het boek* ‘the book’ does not form a constituent with the verb *gelezen* ‘read’ in (5b), and they thus allow for a mediated dependency between the object and the verb. In particular, some mechanism is posited in order to allow a complex constituent [*heeft gelezen*] (importantly, with no traces of the object) to inherit the subcategorization of the non-head, i.e., the participle. In Williams (this volume), this inheritance is referred to as *Geach’s Rule* and was first proposed for Germanic verb clusters in Categorical Grammar by Steedman (1985). Approaches within HPSG (Hinrichs & Nakezawa 1994; Kathol 2000) use such a mechanism as well.² In such theories, there are no truly discontinuous constituents as the object is not selected by *gelezen* alone but rather by the complex predicate [*heeft gelezen*] with which it is indeed adjacent.

The second family of theories represented in this volume originates with Haegeman and van Riemsdijk (1986). These approaches posit traceless surface constituents isomorphic to those posited by the inheritance theories. For proponents of these theories, though, the constituents are derived. Subcategorization requirements are taken to be met at some early stage of the derivation (such as D-structure) and a subsequent operation alters the constituency. Typical of this family is the positing of an operation of *reanalysis* or *rebracketing*, often restricted to adjacent input constituents (see especially Section 2.3, below). In the instantiations of this idea that are most clearly delineated from the other frameworks, rebracketing is held to operate in the mapping from a purely hierarchical representation (the “narrow syntax” of Chomsky & Lasnik 1995) to the phonological string. Within models where semantics interprets narrow syntax only, these theories differ from both the inheritance and the antisymmetry models in that cluster formation cannot feed semantic interpretation and thus word order differences in such clusters could not correlate with interpretive differences.

The final family of accounts of verb cluster phenomena are *movement* approaches originating at least in part with Evers (1975), and now encompassing studies within the Antisymmetry framework of Kayne (1994) (see especially den Dikken 1996; Zwart 1996). Such approaches share with the reanalysis theories the view that subcategorization requirements are met at D-structure (or something like it) and that the surface constituencies are derived. They part company, though, in (presumably) denying that the mechanisms which derive the discontinuous de-

dependencies on the surface are anything other than the familiar kinds of movement illustrated in (4).

To the extent that this grouping of the various proposals is reasonable, the major issues on which opinions are divided seem to me to be:

- the treatment of variations in headedness (primitive or derived)
- the place of arbitrary variation in the grammar (represented, but ignored, in the structures that are the input to semantics, or derived in the *Spell-Out* module)
- the role of linear relations, including adjacency, in (narrow) syntax

With the landscape mapped out in this way, the following sections present some of my own views on the strengths and challenges for the various families of approaches.

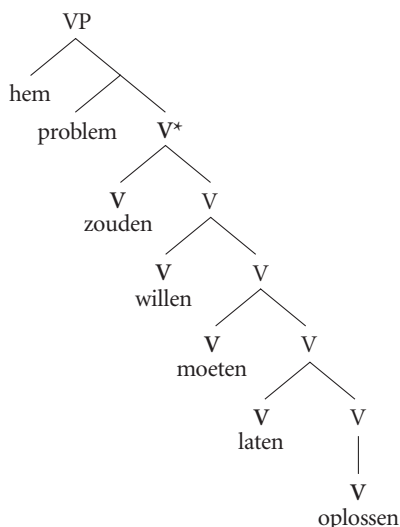
2. Headedness and constituency

2.1 Extended headedness

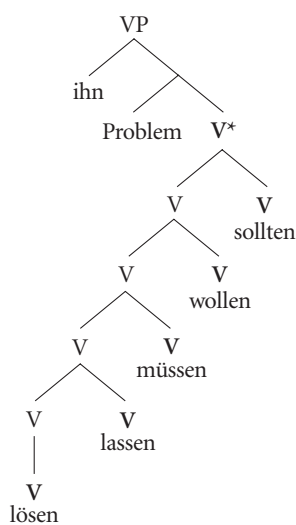
The inheritance and the reanalysis approaches taken together share an acceptance of primitive headedness/directionality parameters, though individual accounts vary in the manner in which these are represented. In particular, these approaches are distinguished from the movement approaches in allowing for the possibility that two languages or constructions might (at least in principle) vary *only* in precedence relations, with no concomitant difference in constituency relations. The clear case of this is headedness, as in (2) up to Saussurean arbitrariness in the lexical items.

Cluster-internal variation can be assimilated to headedness variation on the assumption that the verb cluster, i.e., the sequence of verbs at the right edge in (3), forms a constituent to the exclusion of the nominal arguments. We can call this constituent V^* to avoid any commitments about projection level (X° vs. XP). Once such a constituent is derived at some level of representation, it may serve as the input to language/construction specific headedness rules. For example, the German versus Dutch contrast could then be modeled as in (6). In these trees, V^* is final within VP in both languages, but internal to V^* German is head-final and Dutch is head-initial.³

(6) a. Dutch



b. German



Many other attested orders (though not all – see below) can be cast as involving mixed headedness within V^* and the Verb Projection Raising constructions in Flemish and Swiss are readily accommodated by allowing V^* to include phrasal projections and thus internal complements. There is an empirical question as to the limit of variation that is allowed by UG. Thus Wurmbrand (this volume) suggests that different constructions or classes of verbs (modals, auxiliaries, participles) may vary in headedness, while the approach in Kathol (2000) allows for individual verbs to bear lexical specifications for the headedness of the constituent in which they occur. Another difference between approaches lies in which verb is responsible for the headedness of the construction in which it occurs; for Kathol, for example, it is the non-head, i.e., selected, verb which is specified as obligatorily preceding or following its selecting head, whereas for Williams, it is the head that is specified as preceding or following its complement.

One might (and I will) call these families of approaches the *extended headedness* approaches since they preserve an important role for headedness as a point of minimal variation between languages or constructions.

2.2 Inheritance versus reanalysis

The extended headedness approaches differ amongst themselves in the claims that are made about how the special V^* constituents in examples like (6) are established. Under the inheritance approaches (originating, I believe, with Steedman

1985), the complex constituents like V^* are base-generated as such and thus the difference between English and Dutch is not only one of precedence but also one of syntactic constituency. Under the inheritance approaches, there is no level of representation at which the Dutch object *het boek* in (5b) ever forms an English-like VP constituent with the verb *gelezen* excluding the higher auxiliary. On the reanalysis approaches (originating with Haegeman & van Riemsdijk 1986) the complex predicate constituents are derived from more English/German-like VPs. The derivation of (5b) within the reanalysis framework is sketched in (7) (see Wurmbrand, forthcoming, for a far more detailed presentation of the various theories that have been proposed).

- | | | |
|--------|--|-----------------------------|
| (7) a. | [_{VP1} [_{VP2} <i>het boek gelezen</i> ₂] <i>heeft</i> ₁] | D-structure constituency |
| b. | [_{VP1} <i>het boek</i> [<i>gelezen</i> ₂ <i>heeft</i> ₁]] | Reanalysis/Rebracketing |
| c. | [_{VP1} <i>het boek</i> [<i>heeft</i> ₁ <i>gelezen</i> ₂]] | Flip/Inversion = Headedness |

The derivation begins with a base structure (7a) in which the subcategorization restrictions are satisfied in the semantically motivated constituents, for example, in which the object is the sister to its selecting verb. A transformation of reanalysis or rebracketing (7b) alters the constituency, though not the precedence relations among the terminal elements. Finally, the effect of surface discontinuous constituency is achieved by applying inversion rules within the derived constituents, as in (7c).

Although the two approaches converge on the surface constituency, it would seem that the presence versus absence of the structure in (7a) should have the potential to distinguish among the theories. On might, for example, expect to find interpretive correlates when scope bearing elements are involved. Consider, for example the scope interactions between a quantified object and an inherently negative verb as in (8).

- (8) a. ... (*that*) *Ivan* [*forgot* [*to bring all the books*]].
 b. ... (*that*) *Ivan* [*forgot all the books*].

The example in (8a) admits of a reading in which the inherent negation in the verb *forget* scopes over the universally quantified object (i.e., Ivan remembered to bring some books, but not all), consistent with the surface c-command relations indicated. (The example is also consistent with a reading in which the universal scopes over negation though it is not trivial to show that this is a true ambiguity as opposed to vagueness.) The example in (8b) lacks such a reading; this sentence is infelicitous in a situation where Ivan remembered some of the books, but not all. Imagine, for the sake of argument, that the distinction has to do with constituency, say, that the “not all” reading requires the verb *forget* to asymmetrically c-command the universally quantified DP in object position, which it does in (8a)

but not in (8b). Making the appropriate lexical substitutions into a cluster example like Dutch (5b), the inheritance theory differs from the reanalysis theory precisely in whether or not there is a constituency meeting this requirement at any level of representation. In the reanalysis theory, the surface constituency in (9b) is derived from (9a), while in the inheritance theories (9b) is the only structure posited.

- (9) a. ... (that) Ivan [[all the books to bring] forgot] before reanalysis and inversion
 b. ... (that) Ivan [all the books [forgot to bring]] inheritance

The presentation just above is intended to be illustrative only, the assumptions about scope are probably too naïve to be useful as stated. However, it is clear that scope-bearing elements do enter into clusters, and the theories do make different assumptions about basic constituent structures, from which it should in principle be possible to derive predictions about scope. As far as I know, the facts have not been tested.⁴

The differences between the two classes of theories are particularly clear – at least in principle – if they are embedded in the Y or T model of grammatical architecture proposed in Chomsky and Lasnik (1977). The salient property of this model is the assumption that the syntax mediates the relation between sound and meaning at the phrasal level by deriving hierarchical structures that are interpreted by both the semantic and phonological components. A derivation is conceived of as containing a point (recently called “Spell-Out”) at which the information is split and subsequent operations selectively manipulate either the semantic (e.g., QR) or phonological structure. Because of this architecture, differences in syntax before Spell-Out (among languages or constructions) constitute differences in the structure that serves as the input to semantics and thus at least in principle could be expected to correlate with differences in semantic interpretation. For example, scrambling, considered above, is a syntactic operation happening before Spell-Out and therefore it feeds both word order (phonological form) and interpretation.

One particularly strict version of this general framework holds that syntactic structure consists solely of hierarchical information (dominance relations, constituency) with precedence relations established in the mapping of the syntactic structure to the phonological string (see Marantz 1984:7–8). An intuition shared by a number of proponents of these frameworks is that truly arbitrary, language-particular variation in precedence relations, such as differences in head-complement order (i.e., headedness) which are not known to systematically correlate with semantic interpretation, are therefore best taken to be the domain of what we might call *Spell-Out* rules, i.e., part of this mapping from syntactic structure to linear string. From this perspective, one might ask whether the reanalysis/rebracketing process is properly viewed as a syntactic or a post-syntactic op-

eration. Such a question makes sense only when embedded in a theory that makes the distinction independently, and could be explored by asking whether the triggers and restrictions on reanalysis (as diagnosed by cluster formation) are syntactic (referring to meaning and hierarchy) or morphological/phonological (referring to notions of precedence alone). Though the full question is perhaps premature, Susi Wurmbrand presented some initial arguments in the course of the Working Group meetings that the cluster formation is dependent upon the morphological and not the syntactic category of the elements involved (see also Wurmbrand 2003). The IPP construction (*Ersatzinfinitiv*) is characterized by the use of a (morphological) infinitive form of the verb where a participle would be expected on general grounds (e.g., complement to auxiliary *have*). In terms of construction-specific ordering, this infinitive patterns with other (true) infinitives and not with its syntactic kin, the other participles. This is the kind of argument that would weigh in favour of a particular interpretation of the reanalysis view, especially as against views that take cluster formation to be (narrowly) syntactic.

2.3 Why OV?

Another point regarding headedness which comes up in the discussion of verb clusters, and which remains open so far as I can see, lies in the distribution of the phenomenon within Germanic. In particular, leaving aside Hungarian (and a quibble about Yiddish) to which we return, verb cluster formation is restricted to the OV Germanic languages. In the VO languages (English and the Scandinavian languages at least), departures from the order which directly reflects the syntactic hierarchy (e.g., (2a)) are limited to instances of movement to the clause initial position (VP-fronting, Stylistic Fronting in Icelandic and Old Swedish) or extraposition of a VP or larger constituent.

Inheritance-based theories such as Williams (this volume) and its antecedents in CG and HPSG seem ill-equipped to capture this restriction in a principled manner, where the reanalysis based theories may fare better.

To see the difference, consider first the analysis of Dutch (10a) offered in Steedman (1985) (example attributed to Huybregts 1976).

- (10) a. ...*omdat ik Cecilia de nijlpaarden [zag voeren]*
 because I Cecilia the hippos saw feed
 ‘...because I saw Cecilia feed the hippos.’
 b. ...[*because [I [saw [Cecilia [feed the hippos]]]]]*]

The non-finite verb *voeren* ‘feed’ is a normal transitive verb, and as such it subcategorizes for two NPs (first the object, then the subject). The result is what we might think of as a non-finite small clause: [_{SC} NP [NP V]]. The verb *zag* ‘saw’ subcatego-

Nothing in these accounts prohibits the same operation from applying in a VO language like English or the Scandinavian languages, however. The mechanisms invoked to account for Dutch (10a) also permit either (11a) or (11b) in English. The combination *saw-feed* should, in effect, have the same distribution as a normal ditransitive verb up to issues of precedence.⁵

- (11) a. *... *because I [saw-feed] Cecilia the hippos.*
b. *... *because I Cecilia [saw-feed] the hippos.*

An appeal to a lexical accident is implausible since constructions like (10a) appear to be systematically absent from the Germanic VO languages.

Note that what is in essence the same point can be made with respect to Williams's *Flip* in the special constituents. None of the inheritance (or movement-based, see below) theories currently able to capture the range of facts in West Germanic can exclude (12a) (or its word-for-word translation in any of the Scandinavian languages) for any principled reason. The derivation to be excluded is sketched in (12b–c); compare the derivations of Dutch on the extended headedness theories in (7). (Innumerable derivations are possible under Antisymmetry theory, and must be excluded by language-particular stipulations.)

- (12) a. **He must bought have the book.*
 b. [_{IP} *He must*_I [_{VP} *have*₂ [_{VP} *bought*₃ *the book*]]]
 ↓
 c. [_{IP} *He must*_I [_{VP} [_{V°} *bought*₃ *have*₂] *the book*]] by Reassociate/Head-Movement

An answer to the question of why this is restricted in this manner is one of the prize puzzles of studies of Germanic word order. The current best guess would appear to try to relate this to the intuition, shared among all the frameworks discussed above, that the special mechanisms that account for the ordering in clusters are operative in a “small” domain, a complex X^o in the trees in (6), something slightly larger in

Swiss German and West Flemish varieties that allow for Verb Projection Raising. The trick, then, will lie in restricting the formation of the appropriate constituents to the OV languages.

Haegeman and van Riemsdijk (1986) and van Riemsdijk (1998a) have suggested that the key factor lies in string adjacency among the affected elements. As van Riemsdijk (1998a) notes, string adjacency alone is insufficient; the verbs in English (12) are adjacent, yet cluster formation is impossible. Note, though, that the VO languages and the OV languages (within Germanic at least) are independently known to differ as to their tolerance of right-adjoined adverbs. The right edge of a VP or clausal projection appears to be an impossible site for base-generated adjunction in the OV languages, where such adjunction (along with left-edge adjunction) is freely available in the VO languages. It seems that there is a hope then of distinguishing between the OV languages, in which the consecutive verbs are *necessarily* adjacent (up to extraposition), and the VO languages, in which the verbs may be accidentally adjacent in any given sentence (e.g., (12)), but may in principle be separated by base-generated adjuncts (or perhaps specifier positions). Only the former permit cluster formation.⁶

The appeal to the necessary adjacency idea strikes me as a promising direction, though at the moment it is in part a speculation regarding the reduction of one unsolved problem to another, namely why right-adjunction should correlate with headedness, where left-adjunction does not (though see Saito & Fukui 1998 for related thoughts). Nevertheless, if the appeal to adjacency will ultimately prove to be the correct account of the VO/OV asymmetry, it is hard to see this as anything other than an argument for an account that invokes a level of syntactic representation distinct from the surface constituent structure in verb clusters. The reason is that the adjacency relation must be computed over a structure that is distinct from the surface structure. The verbs in (12c) are adjacent to one another and the structure is consistent with all properties of Williams's CAT or any other inheritance theory, so far as I can see. In other words, adjacency must be computed before reassociation applies, but on the inheritance theories, the reassociated structures are the base-generated structures – there is nothing before them over which the adjacency condition can be stated.

2.4 Limits of extended headedness

Under the extended headedness approaches, the verb cluster ordering phenomena are the analogue of general headedness variation, but within the special constituents noted as V^* in (6). The restrictions on the order become, in essence, restrictions on what the constituents are that may feed the headedness rules. UG sets the possible bounds of variation; language and construction specific varia-

tion is then essentially arbitrary within these bounds. For example, Wurmbrand (forthcoming) carefully outlines the range of possible word orders that can be characterized by applying headedness rules (= Williams's *Flip*) to a three-member cluster. Since headedness maintains the integrity of constituents, it is impossible using only this mechanism to derive orders in which underlying constituents are discontinuous on the surface, i.e., without reanalysis or reassociation. Thus, if reanalysis may feed cluster formation, then cluster-internal headedness rules expand the range of possible orders, but not without limit. From a three-member cluster [1 [2 3]], only four orders are possible:

- (13) a. possible: 1 2 3; 1 3 2; 3 2 1; 2 3 1
- b. impossible: *3 1 2; *2 1 3

On the surface, the excluded orders do occur (see (19), below), and these must then receive a special treatment involving additional operations. In keeping with the leading intuition of the framework, it is expected that such operations should be detectable on independent grounds. For example, the surface order 2–1–3 might be expected to be the result of extraposition of the lowest VP, and thus would be restricted to contexts independently known to allow extraposition (this much appears to be correct; Wurmbrand this volume). Williams's proposals in this volume are also clearly within the extended headedness family, though in addition to permitting *flip* to derive the orders in (13a), Williams admits of the additional mechanism of *reassociation* which allows the orders in (13b) as well. As Williams discusses, while under his theory UG sets no bounds on the variation in order in small clusters (less than three elements), it nevertheless imposes progressively more severe restrictions on larger clusters.

The extended headedness theories, at their core, share the intuition that dominance relations do not universally uniquely determine precedence relations, and thus, that two languages may (in the limiting case) differ only in precedence relations, with no corresponding syntactic differences.

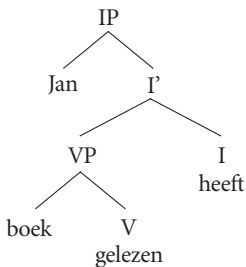
3. Movement and antisymmetry

The extended headedness family of approaches, considered above, may be contrasted at least in part with analyses that involve syntactic movement to account for the surface discontinuous constituents. The most important contrast is with the accounts that subscribe to the framework of Kayne's (1994) *Antisymmetry* theory. These are important in that they deny the central tenet of the extended headedness approaches, namely, that headedness alone can be a point of possible cross-linguistic variation (at least in syntax). In Kayne's theory, all structures

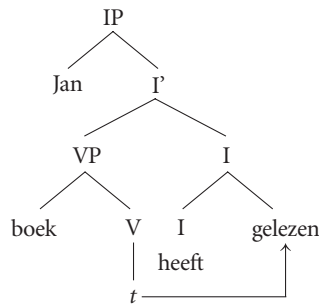
are linearized as Spec > Head > Complement, and thus all variation in linear order must involve variation in syntactic structure. Verb clusters, one might think, would provide a fertile testing ground for this divide between theories. As Wurmbrand (forthcoming) has shown, though, verb cluster phenomena turn out to provide no argument for the antisymmetry theory. Wurmbrand provides an extensive discussion of the various types of derivations that are proposed within the antisymmetry framework and a direct comparison with what needs to be said on a framework admitting of headedness parameters. I see no reason to repeat her discussion here, but I will reiterate and expand on some of the salient points.

Before proceeding to the discussion of the antisymmetry account, it is worth noting that movement accounts are not all committed to the antisymmetry approach, as the organization of this chapter might inadvertently suggest. Indeed, the first generative account of verb clusters in Dutch is a movement account, that of Evers (1975). Evers proposed a rule of Verb Raising that transformed an underlying left-branching constituent (a) into one with a complex verbal constituent as in (b), via raising of the infinitive verb and (right) adjunction to its governor. (I have presented the trees with more current labels.)

(14) a. Underlying



b. Surface



In terms of the constituent structures and the derivation relating them, Evers's account is the clear precursor to the reanalysis account in (7). It shares with that account those properties that are related to the base structure (such as possible interpretive correlations). If adjacency is relevant, and if reanalysis can be more plausibly linked to adjacency constraints than verb raising, then the inversion account may be an improvement on that point. In any event, the differences between a head-movement account (recognizing the possibility of head-final structures and of right-adjunction) is quite similar to the headedness accounts above, in particular, since it admits of directionality parameters as points of minimal variation among language.

An alternative school of thought is centered around Kayne's (1994) *Antisymmetry* theory. The leading intuition of this perspective is the hypothesis that all word order variation is syntactic in the narrow sense of implicating movement. The linearization of any syntactic structure is uniquely determined by UG; thus, two phonological strings *AB* and *BA* cannot correspond to identical syntactic structures. As a consequence, any difference in precedence relations must correspond to a difference in syntactic structure.⁷ For the purposes to be discussed below, Bródy's *Mirror Theory* (this volume) is also a theory of this type, once we grant a distinction between morphological and syntactic objects, where the latter universally instantiate head-complement order up to movement and position of pronunciation, and the former universally instantiate head-final order.⁸

Verb clusters in Germanic would seem to provide a fertile ground for comparing these theoretical approaches. Here, as noted above, one finds exceptionally fine-grained differences among dialects, constructions and even among speakers of the same dialect. In particular, when the entire range of data is considered, the situation appears to be strikingly consistent with the extended headedness position.

One property of extended headedness theories that is occasionally commented upon is that the language (or construction) specific headedness rules are arbitrary. There are two related points that strike one in connection with this comment.

The first point is that, so far as the data have been presented to date, this seems to be an accurate characterization of the facts, especially within Germanic. That is, the orders evidenced in any particular speech variety are not predictable on the basis of any other known property of those varieties. There are a handful of implicational relations, but the fact that, for example, some Swiss German speakers allow (15) while others do not has not (to my knowledge) been shown to correlate with any other property.

- (15) %*wil er si gsee ha mues*
 since he her seen have must
 '...since he must have seen her.' (Wurmbrand, forthcoming:2)

If this is the correct characterization of the facts, then the distribution of the ordering restrictions among languages is in point of fact arbitrary. It must therefore be learned, directly, and any theory which allows for the description of all the patterns must incorporate arbitrary statements somewhere in the description of any particular speech variety.

To criticize the extended headedness theories on the grounds of arbitrariness would require showing that these theories miss empirical generalizations. Where the headedness theories hold that there may generally be a syntactic symmetry between head-initial and head-final orders, some of the proposals incorporating Antisymmetry invoke a series of movements for one order that are not invoked for the other. For example, in the Koopman and Szabolcsi (2000) system, the head-

complement ($1 > 2$) order involves pied-piping of CP, which is not involved in the inverted (or 'roll up') order ($2 > 1$). A theory like that of Koopman and Szabolcsi's would be non-arbitrary if independent evidence in support of this syntactic difference among the languages were presented. For this particular case, though, as Williams (this volume) discusses, Koopman and Szabolcsi resort to a number of language-particular stipulations which, importantly, are specific to the constructions at hand. Arbitrariness is thus not at issue; Koopman and Szabolcsi (2000) have merely traded one set of language-particular stipulations (including headedness) for another (e.g., the *Hungarian Complexity Filter*, p. 61).

If it is the case that the language variation is itself arbitrary, we may still ask the question of how (or how well) the various theoretical approaches succeed in encoding the arbitrariness. What I have called the extended headedness theories above simply encode the observation directly with learned rules of precedence (= learned values for headedness parameters). Surely there can be no objection to these theories on learnability grounds; compare left- versus right- prominence in metrical systems, generally taken to be an irreducible point of language variation as noted above. All current alternative theories, based on the Antisymmetry proposals, retain headedness parameters in some guise, as discussed in the preceding paragraph. Whatever mechanism is invoked to derive a V-final structure from a V-medial/initial structure (or vice versa), the mechanism is ultimately attributed to some set of language particular properties that must be learned. It is in my opinion a weakness of these approaches that, in the absence of surprising correlations or new generalizations, the essentially straightforward point of language variation evidenced by headedness tends to be obscured by a series of curiously unrelated stipulations. Unless it can be shown that the verb cluster patterns correlate with other properties in interesting ways – that is, in ways that the Antisymmetry-based proposals can shed light on – the very arbitrariness of the data implies that verb cluster phenomena in Germanic cannot provide an argument for Antisymmetry theory (see also the remarks on Zwart 1996 in Wurmbrand, forthcoming).

Note also that the Antisymmetry-based theories share with the inheritance based theories the questions concerning the cross-linguistic distribution of verb clusters. Deriving the correlation between verb clusters and (surface) verb-final order would be a feather in any theory's cap. If the connection to (surface) right-edge adverbs, and the related adjacency condition, is on the right track, once again the problem is at least far easier to state in theories admitting of headedness than in those adopting Antisymmetry (see in this connection Williams's comments on the problems in domain restriction faced by Koopman & Szabolcsi 2000).

Approaches to verb clusters within the Antisymmetry frameworks assume that the arguments for the framework are established on the basis of independent considerations. On such theories, the straightforward analysis of the data available on the extended headedness approaches is excluded a fortiori. The puzzle, then, lies in

working through what assumptions about variation in movement parameters must be made in order to meet the burden of descriptive adequacy set by the data. In the best case scenario, the hope would be that the formalization of the observations will itself yield new and un-thought-of predictions that may turn out to be correct.

4. The Hungarian connection

Verbal complementation yields variation in surface word order in Hungarian as well as in the West Germanic languages. One question addressed in some of the contributions to this volume is whether this should be considered the same phenomenon as the West Germanic clustering or not, and if so, to what degree. When we regard the verbs alone, there are some striking differences among these languages. On the working definition of the term “cluster” suggested in Section 1, the orders of Hungarian verbs are not true clusters. Although there are various possibilities for the surface ordering of a series of infinitive-embedding verbs, there is essentially no arbitrary dialectal variation (see Szendrői & Tóth this volume), and the possible orders conform quite closely to what is expected on the basis of a right-branching syntax, supplemented with successive-cyclic head movement (assuming, with Kayne 1994, that this always yields left adjunction). In particular, the derivation in (12b) which is impossible in all the VO Germanic languages looks suspiciously like what best characterizes the Hungarian Roll-Up construction. This is illustrated in (16b) straightforwardly derivable from (16a) via successive cyclic head movement (or its analogue in Mirror Theory, Bródy this volume).

- (16) a. *Utálok₁ kezdeni₂ járni₃ úszni₄*
 hate.1SG begin.INF go.INF swim.INF
 ‘I hate to begin to go swimming (regularly)’
 b. *Utálok₁ úszni₄ járni₃ kezdeni₂*
 hate.1SG swim.INF go.INF begin.INF
 – same (Bródy this volume)

Note in this connection that the right-branching sequences such as (16a) appear to be truly phrasal, and may have phrasal elements (such as a subject DP) interspersed amongst them, while this is impossible amongst the verbs in the roll-up sequence in (16b) (see Ackema this volume). This is as expected on the head movement and Mirror Theory approaches (but see below).

The various conditions on the roll-up and partial roll-up orders described in the papers here (see especially Szendrői & Tóth this volume) are easily stated as conditions on this head-movement: it must be successive cyclic, it must start with the lowermost verb, the finite verb cannot be included in the roll-up etc. This view

would suggest that Hungarian verbal complexes are formed by successive-cyclic head-movement from a head-initial base. Approaches differ in the degree to which they are able to make such conditions follow from deeper principles, or whether they need simply be stipulated add-ons to the theory. The difference between Hungarian and the VO Germanic languages would amount to one of head movement, a point on which the VO languages differ amongst themselves as well (for example English lacks V2, and there are differences among the Scandinavian languages regarding verb movement to Infl in non-V2 environments, see Vikner 1995).

The view that ‘roll-up’ in Hungarian is not the same process as cluster-formation in the OV Germanic languages allows for the exploration of the generalization suggested in Section 2.3, namely, the restriction of the special cluster-forming mechanisms to *base-adjacent* contexts, and thus accounting for their distribution within Germanic. Alternatively – unless Ackema (this volume) is correct in positing an underlying OV structure for Hungarian – assimilating Hungarian to West Germanic jeopardizes this possible account from the outset.

Williams’s contribution to this volume provides an interesting means of making this distinction between the languages sharper. Though Williams applies the CAT language to both Germanic and Hungarian, there is a striking difference between the two sets of accounts. Specifically, none of the Hungarian orders require the use of *Reassociate*, while all of the Germanic orders that depart from the strictly ascending order of German in (1) require this. For Williams’s theory, as a matter of principle, this difference is simply the result of an arbitrary choice of which operations are obligatory or blocked in which contexts, no different from the arbitrary choices among various West Germanic varieties as to where *Flip* is and is not implicated in the definition. It strikes me that treating *Reassociate* and *Flip* in the same manner this way likewise misses the generalization about adjacency along the lines suggested in the preceding section. It is precisely where arbitrary variation is permitted by the theory (headedness, and reassociation under base-adjacency) that seemingly arbitrary variation abounds in the data (OV Germanic); Hungarian, like the VO Germanic languages, is characterized by a striking lack of such variation (see Szendrői & Tóth this volume), surely a fact we should like the theories to accommodate.

4.1 Preverbs and particles

Notwithstanding the differences just discussed between Hungarian and West Germanic, there are various points of similarity between the Hungarian constructions and the Germanic counterparts which have suggested to various authors that a unified account is in order (see Ackema this volume; Csirmaz this volume, for discussion of the similarities and differences between Hungarian and Dutch). These

emerge particularly strikingly when one investigates particle/pre-verb constructions and other instances where more than just verbs are included in the apparent clusters (e.g., VPR).

One observation is that the pre-verb/particle appears to participate in the cluster formation in both Hungarian and Dutch, however, it does so in rather different ways. A typical Dutch example of a particle verb *opbellen* ‘up-call’ embedded in a verb cluster is given in (17). (The verb here is in its participial form.)

- (17) *dat hij haar {op} kan₁ {op} hebben₂ {op} gebeld₃*
 that he her (up) can (up) have (up) called
 ‘that he may have called her’ (Ackema this volume)

In Hungarian, though there is some disagreement, Szendrői and Tóth (this volume) report that a significant majority of speakers allow the pre-verb only immediately preceding its selecting verb or in the clause-initial focus position (for semantically transparent pre-verbs, at least), but not freely interspersed within the cluster. This is partially illustrated in the contrast between (18a), the base sentence, acceptable or marginal for a majority of consultants, versus b–c, unacceptable to most consultants.

- (18) a. *Már egy órája ide értek a tűzoltók és...*
 already an hour here-to arrived the firemen and...
 % *...csak most fognak tudni próbálni be mászni a barlangba.*
 ...only now will.they can.INF try.INF into.PV climb.INF the cave.into
 ‘It’s been an hour since the firemen arrived and it is only now that they will be able to try to climb into the cave.’ I16
- b. * *...csak most fognak be tudni próbálni mászni a barlangba.*
 ...only now will.they into.PV can.INF try.INF climb.INF the cave.into
 ‘... it is only now that they will be able to try to climb into the cave.’ I10
- c. * *...csak most fognak tudni be próbálni mászni a barlangba.*
 ...only now will.they can.INF into.PV try.INF climb.INF the cave.into
 ‘... it is only now that they will be able to try to climb into the cave.’ I1

Indeed, the impression which I take away from the articles collected here is that there is a shared optimism that the positioning of the particle in the Hungarian verb cluster is indeed derivable from deeper considerations, either of prosody (Csirmaz this volume; Szendrői this volume) or aspectual notions (Alberti this volume) or perhaps both. Indeed in this sense the particle (or Verbal Modifier) placement in Hungarian seems to lack the arbitrariness (i.e., irreducibility to other linguistic factors) which characterizes many of the verb cluster effects in the West Germanic languages.

There is one shared aspect of the distribution of non-verbal material in the clusters, though, and this may be of interest in choosing among competing theories. Thus, while it is true that the particle *op* may occur interspersed throughout the construction in (17) (as may certain objects in West Flemish and Swiss German VPR constructions), there is nevertheless an inviolable condition that the particle (or light object) must precede its selecting verb. Thus, while the participle may precede the other two verbs (the 3–1–2 order), if it does so, the positions available to the particle are suddenly restricted.

- (19) *dat hij haar {op} gebeld₃ {*op} kan₁ {*op} hebben₂ {*op}*
 that he her (up) called (up) can (up) have (up)
 ‘that he may have called her’ (Ackema this volume)

Parallel restrictions arise with objects in those varieties that allow the Verb Projection Raising construction. All of these patterns are consistent with the descriptive observation in Section 1; the particle (or object) being a non-verbal element, the acceptable and unacceptable patterns in (17)–(19) (and their analogues in VPR) are distinguished by whether or not they follow their non-verbal complements and other associated expressions. This is illustrated with an object and an adverb in Swiss and German respectively in (20) and (21) (Wurmbrand, forthcoming: 23 and references therein).

- (20) a. ...*ob si hett₁ d Prüeffig besto₃ chöne₂*
 ...whether she had the exam pass can
 ‘[who knows] whether she could have passed the exam.’
 b. *...*ob si hett₁ besto₃ d Prüeffig chöne₂*
 ...whether she had pass the exam can
 ‘[who knows] whether she could have passed the exam.’
 (21) a. ...*daß er das Buch hätte₁ genau durchsehen₃ sollen₂*
 ...that he the book had carefully through-look shall
 ‘...that he should have looked through the book carefully.’
 b. *...*daß er das Buch hätte₁ durchsehen₃ genau sollen₂*
 ...that he the book had through-look carefully shall
 ‘...that he should have looked through the book carefully.’

The generalization that a non-verbal element in Germanic must precede (though not necessarily immediately) its associated (e.g., selecting) verb amounts to something very close to the generalization stated regarding the Hungarian constructions in (16). In both Hungarian and West Germanic, the left-branching order ($3 > 2 > 1$) the sequence cannot be interlaced with XPs, while in the right-branching order ($1 > 2 > 3$) the sequence of verbs may be interrupted by XPs. In a mixed sequence, such as $1 > 3 > 2$ illustrated above, the left-branching (i.e., right-headed) portion is inviolable (20b), (21b) while the right-branching (i.e., left-headed) part of the cluster ($1 > [3 > 2]$) allows for intervening XPs, as expected.

Note that this broader generalization emerges from the separate accounts given for each of the constructions, though not for any particularly principled reason. For Hungarian, this situation emerges for the straightforward reasons described under (16) – the left-branching order (16b) might be taken to be the result of head-movement, or the morphological mirror of the syntactic complementation structure in (16a). Either way, only the left-branching structure is expected to be inviolable, as the right-branching structure has an XP node between each verb, a suitable target for XP-adjunction.

Why this situation emerges in cluster accounts of the West Germanic data lies in the generalization that reordering only applies to verbal elements. To accommodate the Dutch particle facts, and VPR generally, the extended headedness approaches all admit verbal projections in the construction of the constituents (like those in (6)) that are input to the headedness rules. Thus, Haegeman and van Riemsdijk (1986:426) and Williams (this volume) allow the X' -level of verbal constituents subject to reanalysis/reassociation to be subject to parametric variation, but the headedness rules themselves (*flip*, *inversion*) are stated only over those verbs selecting verbal complements. For the Dutch particle cases, assuming the particle to originate as the complement of the lowest verb, $[V'-V]$ reassociation preceding *flip* (in Williams's terminology) will yield the order in which the particle is intermediate in the cluster (following the higher verb), where $[V-V]$ reassociation will "strand" the particle at the left edge of the cluster.⁹ If *Flip* is restricted to the relative orders among verbs and their verbal complements, the Germanic generalization follows.

In principle, this should yield a less absolute impenetrability of the left-branching orders in Germanic than in Hungarian: the order $3 > X(P) > 2 > 1$ or $3 > X(P) > 1 > 2$ should be possible so long as $X(P)$ is a dependent of one of the higher verbs. This might not be correct. Henk van Riemsdijk (personal communication, 7/2002) provides the following examples from Swiss German with an adverb and an object plausibly associated with the intermediate verbs (*wele* 'want' and *hölfe* 'help', respectively). These cannot immediately precede their associated verb when that verb is preceded by the lowest verb of the cluster.

- (22) a. ...*wil* *mer s obst* *hetted*₁ *am liebste* *wele*₂ *verschnap*₃
 ...because we the fruit would've most dearly want distill
 'because we would have preferred most to distill the fruit into eau-de
 vie'
 b. %...*wil* *mer s obst* *verschnap*₃ *hetted*₁ (**am liebste*)
 ...because we the fruit distill would've most dearly
 *wele*₂
 want
 'because we would have preferred most to distill the fruit into eau-de
 vie'
- (23) a. ...*wil* *mer wänd*₁ *em Peter* *hälfe*₂ *choche*₃
 ...because we want DAT Peter help cook
 'because we want to help Peter cook.'
 b. %...*wil* *mer em Peter* *choche*₃ *wänd*₁ *hälfe*₂
 ...because we DAT Peter cook want help
 c. *...*wil mer choche*₃ {*em Peter*} *wänd*₁ {*em Peter*} *hälfe*₂

In effect, current accounts from the extended headedness perspective imply that the correlation between order and impenetrability, if true, is at best a conspiracy of other factors (including, for example, the absence of right-edge of VP adverbs in German), at worst spurious. To the extent that the currently available extended headedness accounts allow us to understand (most of) the conspiracy of factors involved, the fact that the apparent correlation is not stated directly in the theory cannot constitute a criticism of these approaches. Nevertheless, these accounts might miss some important facts about VPR structures and internally leave a good deal to the imagination, (why should inversion be restricted to verbs selecting a verbal complement?) and it is not inconceivable that the development of an account that unifies the Hungarian facts more closely to the West Germanic facts might shed light on the various issues left as open questions in the present volume.

5. Concluding remarks

Verb cluster constructions and the related topics of verb projection raising and particle climbing, seem to me to bear on some deep questions facing syntactic theory, specifically, those identified at the end of Section 1: *headedness*, *arbitrariness*, and *linearity*. I have offered here my own reflections on the manner in which some of the material discussed in this book bears on these questions, or in some cases appears not to bear on the question where one might have originally hoped that it would. As I hope to have indicated above, though, it is clear that despite the

significant progress made in the 25 years since Evers introduced the issue of the discontinuous dependencies in the Dutch clusters, there is still work to be done.

Notes

* I am grateful to Henk van Riemsdijk for inviting me to participate in the Working Group on Verb Clusters, and for comments on a draft of this chapter. Kriszta Szendrői kindly provided invaluable help with and discussion of the Hungarian examples. For discussion of the general issues touched upon here, my thanks to the members of the Working Group, especially Susi Wurmbrand. Partial financial support for this research was provided by SSHRC 410-99-0902 and by research funds from McGill University.

1. This way of stating the headedness of Dutch, German, Afrikaans etc. captures the fact that clusters are always right-peripheral (up to extraposition), along with the distribution of cluster-internal non-verbal constituents in Verb Projection Raising constructions (see Section 4). Also, if as Wurmbrand (2001b) argues, restructuring complements are VPs, while other infinitive complements are clausal, then this same generalization may also form the basis for an account of why various aspects of cluster formation are limited to restructuring verbs.

2. Williams's theory (this volume) is clearly related to the CG and HPSG approaches, but differs in being embedded in a framework that does accept movement for the canonical cases such as (4), see below.

3. It is not necessary to posit a cluster or V* constituent for the German order here, as that is derived with a simple head-final VP as shown in (2). The cluster is posited here for expository convenience as it makes for the most minimal variation with the Dutch example selected. The choice is not innocuous in the bigger picture and I return to this below.

4. Den Dikken (1996) has argued that the positions of arguments in Verb Projection Raising constructions in West Flemish have an influence on their scope-taking possibilities. What is not shown, but is directly relevant to the question here, is whether the linear order of the verbs alone influences the constituency of the clause, in a manner that may have implications for scope possibilities. Note also that in German, there is an effect of forced wide scope in unambiguously lexical restructuring contexts such as long passive (see Wurmbrand 2001a on which the above examples are modeled) but this effect appears to be tied to case assignment/agreement properties and not to surface constituency/linear order as the inheritance theories would predict (see also Bobaljik & Wurmbrand 2003 for discussion).

5. The order in (11b) is expected if, as in Steedman's framework, precedence relations are part of subcategorization. In inheriting the subcategorization of *feed*, the complex *saw-feed* should combine with an object to its right and a subject to its left. If, as in Williams's theory, subcategorization is for type, but not for precedence, then (11a) might be expected as it displays the canonical word order for a predicate that combines with three NP arguments (cf. *because I showed Cecilia the hippos*).

6. Yiddish is conspicuously exceptional in this regard, in that it is quite generally a VO language but allows a cluster-like complement-verb order with passive participles, in which

the participle may precede the passive auxiliary, as illustrated in (i) from den Besten and Moed van Walraven (1986: 117) (with minor modifications following Diesing 1997: 386).

- (i) a. *Matones zaynen gevorn gebrakht*
 gifts are been brought
 b. *Matones zaynen gebrakht gevorn*
 gifts are brought been
 both: 'Gifts have been brought.'

Even controlling for leftward movement of the object (scrambling, object shift), other examples of OV-like orders in the verbal domain in Yiddish include certain adverb-copula sequences and verb-particle combinations. These are discussed by Diesing (1997), who argues for movement analyses in all cases, in particular, arguing that the example in (i-b) involves incorporation of the participle into the auxiliary. An approach along these lines is necessary if it is indeed true that true verb cluster effects are limited to head-final languages. Verb cluster orders with passive participles are special in Afrikaans as well, which allows the order 3–1–2 only when the "3" element is a passive participle (see Wurmbrand this volume, Note 1 to Table 2). As noted in (13b) below, this order is potentially problematic within some approaches.

7. There is at least one exception, namely, the possibility that the trace of a moved element is a copy of that element, and variation in linear order may arise from differences in the choice of copy pronounced. Kayne (1994: 96) endorses this as consistent with the framework, see also Bobaljik (2002) and references therein for arguments in favour of this approach in a model not reliant on the LCA. In order to set out the more interesting claim, I will disregard this possibility in the discussion here.

8. Bródy introduces the term "morphological specifier" for the non-head member of a binary-branching morphological structure. For example, in an incorporation structure [N V] where V is the head, Bródy refers to the N as the "specifier".

9. See Ackema (this volume) and Wurmbrand (forthcoming) and references therein for specific derivations; the latter also includes a survey of the various elements that may be interspersed in clusters in the various Germanic languages. Both Ackema and Wurmbrand also point out difficulties with deriving the precedence generalizations in antisymmetry-based approaches.

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“Roll-up” structures and morphological words*

Michael Brody

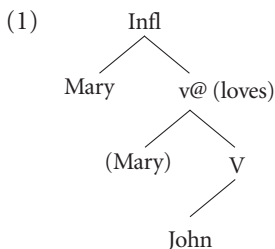
1. Introduction

This paper contains two case studies. The first one in Section 2 elaborates the analysis of phrasal roll-up structures suggested towards the end of Brody (2000a). The solution is applied to the case of sentence final adverbials, which are shown to provide further evidence for the analysis and hence indirectly for the strict version of mirror theory that forces it. Section 3 looks at Hungarian prefix chains, and argues that some of these involve syntactic spec-targeting chains and others are better treated in terms of morphological words. Mirror theory, in which morphological words are necessarily local in a much stricter sense than the one in which syntactic chains are, provides a framework where apparently central aspects of the rather complex behavior of these prefixal elements can be understood. I shall start with a brief recapitulation of some of the main features of mirror theory.

In this theory (Brody 1997, 2000a) the morphological structure of words is expressed syntactically as complementation structure. The mirror hypothesis ensures that if x is the complement of y then x is taken to be the morphological specifier of y . For a large set of morphemes (generally suffixes) it is also true that if x is the morphological specifier of y , then x is the complement of y syntactically. As a simplified example, V is (part of the) the morphological spec of Infl and V is also typically (part of the) the syntactic complement of Infl .

In mirror theory complementation structure is taken to be the default expression of the morphological structure – this is called the mirror hypothesis. According to this hypothesis the syntactic head-complement relation expresses the morphological specifier-head relation in inverse topological order: complements follow while specifiers (whether syntactic or morphological) precede the head. Thus no separate X^0 internal representation needs to be assumed that matches and duplicates the complement series. Consider for example the simplified structure in (1) of say *Mary loves John*. Here (*Mary*) is the trace of the subject in spec- v , so *Mary* and

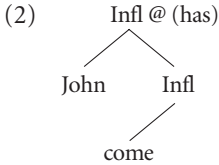
(*Mary*) form a chain; the object *John* is taken for the sake of presentation, probably counterfactually, not to form a chain with a position higher than spec-V; and Infl, *v* and *V* represent, again in a simplified fashion, the morphemes (some null) from which the word *loves* is composed.



The complement series in (1), Infl+v+V serves as the syntactic representation of the morphological word (MW) V+v+Infl. Morphology spells out the syntactic representation of an MW (a) in one of the head positions, here in that of *v* (as indicated by “@”), from which the MW is composed and (b) in inverse order – due to (the appropriate version of) the mirror hypothesis, an axiom of the system.

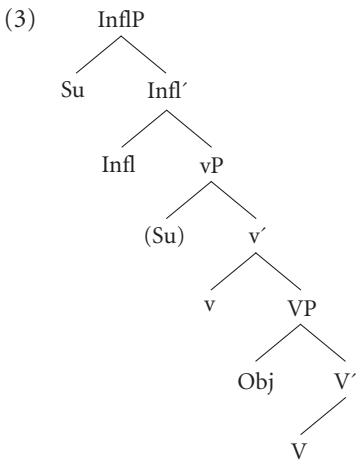
All this gives the correct morpheme order both word-internally (*love+s*) and also word-externally if the spec (and whatever it dominates) precedes the head, and the complement (and whatever it dominates) follows it. The order of head and complement follows from the order of spec-head given the assumption that specifiers uniformly precede the head both in syntax and in morphology and that syntactic complement relations are inverse order morphological spec-head relations – the mirror hypothesis again. Thus in (1) *Mary* precedes Infl, Infl precedes *v* where *loves* is spelt out and *v* precedes *V* and whatever *V* dominates, i.e., in particular, *John*.

Under mirror theory the syntactic complementation relation entails morphological specifierhood: if *x* is the complement of *y* then *x* is the morphological specifier of *y*. Thus, first of all, the arguments of the verb that are morphologically independent of it – (non-incorporated, non-clitic) subject or object, or clausal complement etc. – must be specifiers. Secondly, if the subparts of what in standard systems are extended projections do not form an MW then these parts must also be in the specifier-head rather than in the complement-head relation. For example in *John has come*, the constituent *come* cannot be (part of) the complement of *has*. The auxiliary is an element that is part of the extended word but not of the morphological word of the main verb. It must therefore be a specifier as in (2).



To ensure the correct word order, it must be assumed that *come* is the specifier of a head that is lower than the head in which *has* is spelt out in morphology.

The representations in (1) and (2) are simplified in several ways for presentational purposes, but there is a particular simplification that is not presentational, but is meant as a substantive restrictive hypothesis. This has to do with the elimination of phrasal nodes. The structure in (3) for example that (1) replaces is obviously redundant.



Call the claim that the set of phrasal and X^0 internal projections of a head can be systematically collapsed the telescope hypothesis. X^0 internal projections are unnecessary given the treatment of MWs as (inverse order) complement lines. As for phrasal projections the telescope hypothesis embodies the expectation that given the accumulating evidence for multiple additional heads of various types in the structure, phrasal projections will invariably be unnecessary. For example the major evidence for the V' level, based on the hierarchical subject-object asymmetry, disappears when the subject is taken to be spec-v. This ensures without the intermediate bar level that the subject is higher than the object. Any category can be interpreted as either a phrase or a head in mirror theory – a head by itself and a phrase together with all categories it dominates. (Notice also a terminological point: since categorial projection is eliminated, extended projections are better referred to as extended words.)

2. Adverbials on the right

Recall the distinction between Kayne's (1994) Linear Correspondence Axiom (LCA) and the antisymmetry hypothesis. That phrase structures conform to the requirements of the LCA, the antisymmetry hypothesis, is distinct from the claim that this is due to the LCA, an additional issue. As noted in Brody (1998), the LCA creates some redundancies given the theory of phrase structure outlined there. For example, uniqueness of projection does not follow in general from the LCA but this condition predicts the effects of uniqueness for the special case when two heads *X* and *Y* are both immediately dominated by a phrase. (There will be no pair (*C*, *C'*) of constituents then, related by asymmetric *c*-command, such that *C* dominates *X* and *C'* dominates *Y*.) Similarly, extended structure preservation, another consequence of mirror theory, follows from the LCA only in part. A phrase *P* dominated by (adjoined to) a word that has a complement *C* violates the condition, since categories embedded in the complement would be asymmetrically *c*-commanded by *P* but categories in *P* would also be asymmetrically *c*-commanded by *C*.¹ Auxiliary stipulations are necessary, however, to derive the other half of extended structure preservation, i.e., the fact that words cannot be immediately dominated by a phrase that they did not project.²

As we have seen, problems relating to projections, like uniqueness and structure preservation, disappear in the more restricted framework of mirror theory, which dispenses with categorial projection completely. As discussed in Brody (2000a), this theory furthermore enforces the antisymmetric effects of the LCA by not providing elements and relations with which a non-antisymmetric structure could be built. The theory thus directly inherits certain problems that Kayne's antisymmetry hypothesis faces. In what follows I would like to look at one particular area, that appears to have caused difficulties for the antisymmetry approach – namely the position of English sentence final adverbial clauses (cf. Williams 1994; Brody 1994; Manzini 1995; Hornstein 1995). I will go through a number of arguments that all seem to suggest that contrary to what might be expected from mechanically applying the antisymmetry hypothesis, these adjuncts must be higher than preceding VP-internal elements. I will argue that earlier suggestions and partial solutions to these problems are not fully adequate. I will provide further evidence that the particular member of this family of analyses that mirror theoretical considerations lead to is in fact the correct solution.

As is well known, principle C tests show that adverbials like in (4) are not *c*-commanded by *V*-complements:

- (4) *We sent him_x there in order to please John_x's mother.*

Faced with such examples one logically possible approach is to deny that principle C tests for c-command. Haider (1993) took such a position arguing that the hypothesis that principle C operates under c-command leads to contradiction. In his example, reproduced in (5) below, the pronoun *her* must be disjoint from the name *Mary* in the complement clause but not from *Mary* in the extraposed relative.

- (5) *Someone has told her_x [who Mary_x met] [that Mary_{*x} will inherit the castle].*

Haider argues that no standard phrase structure could ensure lack of c-command of the extraposed clause at the same time as c-command of the more peripheral complement. But in fact there are a number of analyses compatible with the observation in (5) and a c-command dependent principle C. For example, the relevant structure could be (6), with a Right Node Raising (RNR) derivation for the complement clause:

- (6) *Someone has told [her_x (that *Mary_x will. . .)] [who Mary_x met] [that Mary will inherit the castle].*
 (7) **[Which claim that John_x was asleep] do you think he_x denied t (which claim that John_x was asleep).*

Since principle C is sensitive to elements in A'-trace positions, as exemplified by the standard *wh*-movement case in (7), disjointness from the name in the complement clause can be determined in the trace position and the extraposed and complement clause could be stacked higher than and on the right of V and its complements.

A different Kaynean intraposition analysis that respects antisymmetry is indicated in (8). Kayne (1994: 122–123) considers a different example without a complement that includes a potentially coreferential category but his analysis carries over essentially unchanged. He argues that in a structure like (8) the pronoun *her* is in an A'-position and has a trace position to the right of the extraposed (in Kayne's theory: stranded) clause. He points out that principle C holds in the reconstructed positions of A'-chains and we may add that principle C does not see elements in A'-position. Hence it is this trace rather than the overt position of the pronoun that counts for principle C, and therefore disjointness is predicted from the name in the complement but not from that in the stranded (“extraposed”) clause.

- (8) *Someone has told [her [who Mary_x met] (her_x) [that *Mary_x will inherit the castle].*

Haider's example thus does not show that the assumption that principle C is sensitive to c-command leads to contradiction, even within an antisymmetry framework. Let us continue with the standard assumption concerning the relation of principle C and c-command, which entails that the adverbial in (4) is not c-commanded by the object of the VP. The standard solution of adjoining the ad-

verbal higher, while not available in the antisymmetry framework, appears to be corroborated by much other evidence. I shall next consider briefly some of this evidence.

The anti c-command requirement of parasitic gaps also diagnoses the complement-adjunct distinction.

- (9) a. *Who did you hire t after you talked to pg?*
- b. **Who t went home after you talked to pg?*

In (9a) the object trace appears not to c-command the parasitic gap in the adjunct, while in (9b) the subject trace c-commands the adjunct-internal parasitic gap, resulting in ungrammaticality.

Kayne's (1994) suggestions concerning the apparent discrepancy between the parasitic gap data and the antisymmetry hypothesis are problematic. One of his suggestions is to return to the 0-subjacency account of parasitic gaps, but as noted by Manzini (1995), 0-subjacency accounts seem problematic in general, since they would allow extraction from adjuncts. Another suggestion of Kayne's is that the parasitic gap related operator should be taken as an object-oriented pronominal that moves to matrix AgrO and is disjoint from the subject in (9a) due to the effect of principle B of the binding theory. In addition to being rather stipulative, this suffers from the same problem as the 0-subjacency account: it involves movement out of the adjunct. Kayne's third suggestion is intraposition of the adjunct around the primary *wh*-trace, parallel to intraposition of a second complement around a "heavy" XP in "inverse heavy shift" constructions. As noted again by Manzini (1995), the problem here is that the trace is not heavy in any sense, hence a focusing/defocusing rule like (inverse) heavy shift is inappropriate and should be inapplicable.

Quantifier scope data is also sensitive to the difference between complements and adjuncts. Hornstein (1995) observes that in (10) and (11), where the existential quantifier is taken to bind the pronoun in the adjunct and in the complement respectively, different scope relations can obtain. In (10) the existential unambiguously takes wide scope over the universal, but (11) is scopally ambiguous, here the universal can also take wide scope/distribute over the existential. Thus under the construal where the existential binds the pronoun, for example in (11a) a different person might have asked each attendant, but in (10a) there must be a single person who danced with every woman, not a different one for each.

- (10) a. *Someone_x danced with every woman before he_x left the party.*
- b. *I got someone_x to review every brief without PRO_x leaving the office.*
- (11) a. *Someone_x asked every attendant if he_x could park near the gate.*
- b. *John got someone_x/at least one patron_x to tell every critic that he_x hated the play.*

Hornstein explains this in terms of his A-movement theory of quantifier scope. We can abstract away here from the details of this theory, since the observations suggest that the adjunct must have a different position from the complement under any theory that achieves inverse scope in such examples via reconstruction of the existential to a lower position under the universal. As long as the adjunct is higher but the complement is lower than this reconstructed position, the contrast between (10) and (11) will follow: the existential in the reconstructed position will be able to bind the pronoun in the complement but not in the adjunct.

Additional related problems for the antisymmetry hypothesis arise from structures with multiple adverbials (cf. Andrews 1983; Pesetsky 1989; Cinque 1999). On the assumption that when these are sentence final each c-commands the one that precedes it, the scope relations among these adverbials appear to be straightforwardly determined by c-command in both pre-V and sentence-final position. In both (12) and (13) the interpretation is unambiguous, with *twice* having higher scope in (12) and *intentionally* in (13). Thus the sentences in (12) describe two cases of intentional knocking while those in (13) refer to an intention involving two knocks.

- (12) a. *John knocked on the door intentionally twice.*
 b. *John twice intentionally knocked on the door.*
- (13) a. *John knocked on the door twice intentionally.*
 b. ^(??) *John intentionally twice knocked on the door.*

The last set of data in the present inventory that shows that adjuncts and complements cannot be in the same position has to do with movement and deletion tests for constituent structure. On the assumption that complements but not final adjunct clauses are lower than V, there will be a constituent that excludes the adjunct but includes the complement. The existence of a constituent that includes V and its complements but excludes the adjunct clause appears to be confirmed by VP-deletion (14), (15) and fronting (16). (Recall that in mirror theory there are no phrasal projections, we now take the term VP to refer to V and all categories it dominates.)

- (14) *Mary sent him there in order to please John's mother and Klara did in order to upset her.*
- (15) *Although Mary did in order to upset John's mother, Klara sent him there in order to please her.*
- (16) *...and send him there Klara did, in order to please John's mother.*

Examples parallel to (14)–(16) can be constructed also with complement remnants, but the acceptability status of such examples appears to be different. (In the case of deletion (17)–(18), we get “pseudo-gapping” structures):

- (17) ?*Mary sent John and Klara did Bill.*
 (18) ?*Although Mary gave the book to John, Klara did to Bill.*
 (19) ?...and give the book Mary did to John.

All these examples might be analyzed as involving shifting of remnants to the front of the V followed by remnant VP-fronting/deletion. But whatever the analysis is that makes deletion and fronting of what appear to be VP subparts in (17), (18) and (19) possible, these structures are somewhat marked. A configurational difference between adjuncts and arguments can explain why VP fronting/deletion is not similarly marked with non-complement remnants.³

The combined evidence from principle C, parasitic gaps, quantifier and adverb scope, VP fronting/deletion clearly shows that sentence final adverbials and adverbial clauses are not in the same position as complements. Let us consider the type of solution to the antisymmetry problem this fact creates that many have proposed. This involves creating the difference between complements and adjuncts via placing some part of the structure that includes the VP-internal material into a spec position higher than the adverbial.

For the result clause structures as in (20) Kayne suggests such a structure:

- (20) a. *She_x has so much money now that Mary_x is the envy of all her classmates.*
 b. *[[_y She_x has so much money now] [_C that]] Mary_x is the envy of all her classmates t_y*

Kayne proposes that there is no disjointness effect in (20) because the string *she has so much money now* is in fact an embedded clause that surfaces in spec-C (as indicated). The pronoun *she* then does not c-command *Mary*; – and this is true both for its surface and trace-internal position.

Putting aside for the moment⁴ the question of what triggers movement to spec-C, a problem that would be relevant for both the adverbial clause in (4) and (20), it is easy to see that an analysis along these lines, which would take the main clause to be in the spec-C (or spec-P) of the *in order to* clause as in (21) could not work for the case in (4).

- (21) a. *In order to please John's mother [we sent him there].*
 b. *[We sent him there] in order to please John's mother.*

The analysis looks perhaps dubious to start with since it inverts the intuitively clear main and subordinate clause status in the structure and provides no plausible source for the main clause. The incorrectness of the inversion of the

main/subordinate status can be shown in cases where the structure is embedded further. In (22a) selectional properties of the main predicate show that the main clause of (4) is in fact the main clause. If this was in the highest spec (spec-C or spec-P) of the adverbial clause, then we would expect the adverbial clause and not the clause in its spec-C to be interrogative. The clause in spec-C would clearly be too far from the matrix predicate for *wh*-selection.

- (22) a. *John wondered who we sent there in order to please him.*
 b. *John believes him to have been sent in order to...*

Similar comments apply in the case of a matrix ECM predicate as in (22b). If the main clause was in spec position, its own spec would be too far from the matrix Case assigner to end up accusative, whether ECM applies via government or movement to spec-AgrO.

These problems will not arise under a different version of the hypothesis (essentially following the proposals of Barbiers 1995; Cinque 1999, among others), according to which in (4) it is the VP and not the CP (i.e., in mirror theory the V and not C, together with the nodes it dominates) of the main clause that occurs in a spec position. This spec position would be lower than the subject of the main clause, and thus lower than C and I and their spec's, which take their usual place. The problems just raised in connection with the CP shift to spec-C of the *in order to* clause then would not arise, as the spec-C and the subject of the main clause would occupy their standard position, making *wh*-selection and ECM structures feasible. To solve the problem of lack of source for the VP, assume that the *in order to* clause is in a spec position of some functional head. This is natural, given Cinque's (1999) theory in which all adverbials that precede the thematic position of V are in the spec position of their own dedicated functional head.⁵ In the spirit of Barbiers and Cinque, take then the VP to raise in order to serve as a subject of the adjunct clause, understood as a predicate.

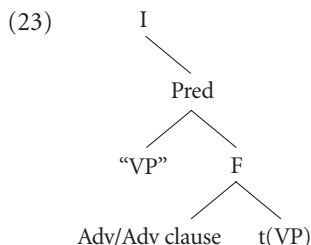
Moving the VP to a spec position above the adverbial answers all the problems listed above in connection with clausal adverbials. The object of the V will not c-command then the adverbial clause, hence there will be no c-command violation in (4) and the anti c-command requirement in the parasitic gap structure (9a) is respected. (9b) will continue to violate the requirement since the subject trace in spec-I will c-command the adverbial. Assuming that the universal can distribute over the existential quantifier only if this latter is reconstructed into its theta position under V entails that in examples like (10) under inverse scope the existential cannot bind a pronoun in the adjunct: the reconstructed existential is now embedded in a spec node. In other words, if the existential binds the adverbial clause internal pronoun then it is too high to be reconstructed under V for inverse scope. There is no problem with binding the pronoun in the complement in (11) un-

der reconstruction since the complement is dominated by V (in standard terms: internal to the VP) in spec-Pred. (The same account of the complement adjunct contrast will work also if reconstruction targets a position higher than V, say the “share” head of Beghelli and Stowell (1996), as long as instead of V this higher head (and therefore everything this head dominates) is taken to occupy the relevant spec position.)

Furthermore, since the VP in spec-Pred is a constituent that includes the complements but not the adverbial clause, the analysis can straightforwardly distinguish the fully grammatical VP deletion/fronting cases in (16) and (17) that leave the adverbial clause behind and which involve deletion/fronting of a constituent from the semi-grammatical cases in (18) and (19) which either do not operate with constituents or, more likely, act on remnant constituents but involve markedness.

The analysis raises other questions, however. Manzini (1995) objects to this kind of approach on the grounds that it would create a unique case where a non-trivial chain is created for the sake of satisfying a checking requirement involving predication. It is not obvious how strong this objection is. One might imagine that the presence of clausal subjects in spec-I is triggered by predication, especially in a framework like that of bare checking theory (Brody 1997a), in which all syntactic features must be semantically interpretable, and therefore heads of A-chains cannot be licensed by uninterpretable Case. At least one other likely candidate for a treatment in terms of predication would be the head of the relative under the raising analysis of relatives forced in the antisymmetry framework (Kayne 1994). On the other hand, taking Tns to be the trigger for Nominative, as in Brody (1997a), may well be a more preferable option.

Notice that the adverbials must apparently sit in spec position contrary to the suggestion that the V(P) originates as (or in) the complement of the adverb (e.g., Sportiche 1994). Cinque provides evidence against this latter assumption based on the existence of head positions in Romance in between adverbials. But, in any case, the proposal of considering adverbs as heads would not generalize to clausal adverbials. The analysis could not take the adverbial clause to be the complement of the adverbial, as it assigns this position to the VP-trace (i.e., to the copy of the V which together with the nodes it dominates occupies the theta-related chain-tail position). Given that adverbials must be in spec positions, it is natural to take the V(P) to be the spec of a higher node, perhaps Pred. The complement of Pred is the adverbial suffix in the spec of which the free morpheme adverb sits. In turn, the complement of this adverbial suffix includes the V(P) trace position. The heads Pred and F are empty here.



Note further the case of adverbials apparently stacked on the right periphery of the sentence as in (12a) and (13a). In the antisymmetry framework, examples like (12a) and (13a) are usually treated in terms of roll-up structures, that is, in terms of successive incremental intraposition. Thus, it is assumed that the adverbials are stacked on the left of the V and the VP raises first to the left of the lower adverbial A and then the constituent it forms with A raises to the left of the second adverbial. This ensures that the underlying scope order is the same in the (a) and (b) examples in (12) and (13), in spite of the surface word order difference.

In the successive incremental intraposition analysis, the only likely candidate for triggering the intrapositions in the roll-up structure is Pred: the raised category must serve as a subject for the adverbial predicate. Thus the lower adverbial is taken to be predicated of the VP and the higher one of the constituent that includes the VP and the lower adverbial. This means that a Pred head must be present on top of each adverb.

This consequence cannot be avoided by assuming that stacked adverbs as opposed to adverbial clauses are in head position (and thus establish a spec-head predication relation with the VP directly). As exemplified by constructions like (24), the adverbial can have its own complement distinct from the VP also when there is more than one adverbial stacked at the sentence periphery.

(24) *John kissed Mary recently more quickly than/before Bill.*

And there may be more than one adverbial on the right periphery, with inverse scope order even when one or more of these are clausal:

(25) *John kicked the door twice (intentionally) in order to irritate Mary.*

(26) *John left when Mary arrived in order to please her.*

The interpretation of (25) is that ‘It was in order to irritate Mary, that John intentionally kicked the door twice’, i.e., ‘in order to > intentionally > twice’. In (26) again, the rightmost *in order to* clause takes scope over the temporal adjunct clause.

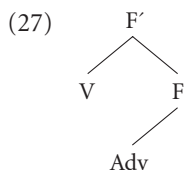
Hence, the analysis that takes the VP-trace to be the complement of the adverbial is unlikely to be helpful and we can assume that the analysis in (23), with

the adverbial in spec position, is essentially correct also for structures that contain adverbials without complements.

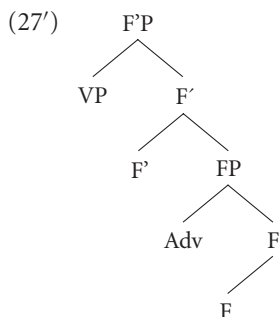
The problem that this analysis of multiple adverbials creates is that we seem to be without means to rule out the case where both adverbials are predicated of the same VP, i.e., to rule out successive step non-incremental VP-intrapolation. (Note that a single subject can in general have more than one predicate as for example in structures with NP-chains.) If successive non-incremental VP-intrapolation was allowed, then it should be possible for example in (12a) for the VP to “move” to a spec-Pred above *twice*, and then “move” further to the spec-Pred above *intentionally*, resulting in the interpretation on which *intentionally* has higher scope than *twice*, which is unavailable in (12a).

In other words, the postulated mechanism of successive incremental VP-intrapolation is quite unlike other known cases of XP-“movement”. Unlike other known cases of XP-chains, it is not allowed to be multiple membered (no “successive non-incremental movement” is possible, but it can have the incremental movement structure that other well-established cases of XP-chains cannot have. In fact, incremental VP-intrapolation is more similar to head-movement in the standard minimalist framework than to XP-movement. It is far from clear how such a similarity could be expressed and motivated. In Brody (2000a) I argued against the existence of head-chains. If this is correct, then there remains no likely candidate in syntax to assimilate incremental intrapolation to.

These considerations lead to the hypothesis that structures involving adverbials on the right periphery should involve no chains at all. In mirror theory a “VP” (i.e., the V and whatever it dominates – the V-family) can continue its extended word independently of whether it is structurally in a spec or a comp position. The choice will be based on morphology (see the analysis of *John comes* vs. *John has come* in Brody 2000a and above). In the V-family final adverbial construction I’ll take the V-family to be “base generated” in a spec position. More precisely, the tail of a (normally trivial, one-member) V-family chain can be in a spec-position. Suppose that the VP is in the spec of a higher head and the adverb occupies the spec position of the associated and dedicated functional head, as in (27). This higher head may in principle be Cinque’s Agr node that may appear between any two functional heads or a copy of the empty functional head.

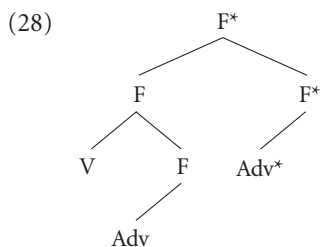


In fact the latter approach to the higher F node seems more appropriate, since this node must be of the same type as the lower F so that V can continue its extended word uninterrupted, as desired. I assume that in this structure Adv c-commands the V (see Brody 2000a). The structure in (27) corresponds to the more standard (27'):



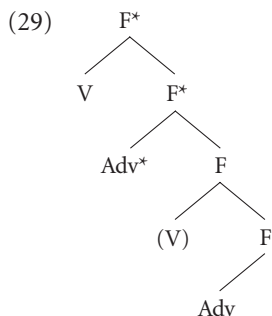
The problems of the successive incremental intraposition account do not carry over to this analysis. No triggering feature for V(P) like Pred needs to be postulated, since as we have just seen, the V-family can be in the spec of the associated adverbial. There is no issue of excluding non-incremental intraposition, V-families do not “move” to spec-Adv at all. Perhaps such a movement/chain is always illegitimate. If so, this may be due to the fact that the adverb and the V-family are in some predication or modification relation in (27/27'), and such a relation should be governed, along with more standard selectional relations, by the Generalized Projection Principle (Brody 1995a, 1998). This principle disallows chains whose non-root member is in a semantically selected position.

The structure of a clause with more than one sentence final adverbial will then be (28) where, given appropriate assumptions, Adv* c-commands Adv which in turn c-commands V:



A structure like (29), corresponding to the successive non-incremental intraposition case cannot arise: this would violate universal constraints on possible extended

projections. Here V is dominated by F*, but the universal (domination) order is (30) by hypothesis.



(30) F* ... > ... F ... > ... V

To summarize: Independently of mirror theoretical considerations, theories of right-peripheral adverbials that assume that the VP forms a chain with a position on the right of these adverbs are problematic. In particular, the solution that assumes VP shift to a spec position raises the issues of what triggers the movement (what licenses the higher chain-member), why no successive non-incremental step VP-chains can be constructed and what makes successive incremental chains possible. The possibility of successive roll up chains and the impossibility of non-incremental successive step structure are properties that are not shared by better established phrasal chains (family chains in mirror theory). If the VP/V-family originates in a spec position on the left of the right peripheral adverb(s) then the universal order of functional heads must be defined on a series of nodes where each immediately dominates the next, but without the additional requirement that each must be a complement of the previous one. This is exactly the conclusion that the strict version (where structural complements must form morphological units with their dominating node) of the mirror theory in Brody (2000a) leads to. The behavior of right peripheral adverbials therefore appears to provide some further evidence for mirror theory, and in particular for its most principled variant.

3. V-raising in Hungarian

The version of the mirror theory outlined in Brody (2000a) entails the traditional generalization in its strict form: head “movement” type relations are highly local. This generalization is stipulated by the HMC, and follows from relativized minimality only with some difficulty, as set out in earlier work. Strict locality follows from the general idea of relativized minimality only weakly in any case, as wit-

nessed by the proposals to modify relativized minimality in various ways to allow various types of apparent HMC violations. Evidence for the local nature of head-chain relations/morphological words therefore constitutes evidence for the theory in which complementation structures mirror extended/morphological words and morphology spells out continuous subparts (lexical/morphological words) of such complementation structures. This theory dispenses with head chains but entails strict locality of head-chain type relations.

Hungarian verbal modifier and more generally prefix incorporation presents a challenge to the assumption of HMC locality, which at least superficially looks sharper than the relatively minor violations of the HMC in certain Slavic and Romance constructions. Unlike these structures, Hungarian prefix incorporation presents itself as an apparently long distance head-chain phenomenon, although with various peculiarities. Recently Szabolcsi (1996) and Koopman and Szabolcsi (2000) have argued for treating the relevant structures in terms of XP-chains. In what follows, I will propose an alternative analysis that makes use of both family-chains and head-chain type relations. Recall that under mirror theory, family-chains are the equivalent of standard XP-chains. These are the only type of chains under this theory, head-chain type relations correspond to morphological words. I will argue that the Hungarian data becomes understandable once these two relations are separated and the traditional assumption concerning strict locality of head-chains type relations is made.⁶

Hungarian has a class of verb-associated elements, usually referred to as verbal modifiers, (VMs) that includes verbal particles, small clause predicates, bare nouns, etc. that appear to be able to form long distance chains.

- (31) *Szét fogom akarni kezdeni szedni [szét] a rádiót.*
 apart will-I want-INF begin-INF take-INF [apart] the radio-ACC
 ‘I will want to begin to take apart the radio.’

The verbal particle *szét* ‘apart’ in (31) belongs to the verb *szedni* ‘take-INF’, but surfaces separated from it by a string of verbs. As noted in Szabolcsi (1996), these verbs do not form a reanalyzed complex, additional nonverbal material can intervene between them. The question therefore arises: Are these VM-chains long distance head-chains? Or are they pied piped XP-chains? (Given antisymmetric structures, such phrasal chains will necessarily involve remnant movement.) Szabolcsi assumes the latter on the basis of the non-local nature of the relation. One might argue, however, that examples like (31) indicate precisely the untenability of the assumption that head-chains must be strictly local, and the necessity of allowing non-local chains (either via long steps or via excorporation).

I will provide some evidence below that (31) indeed involves XP-chains (i.e., chains and not morphological words under mirror theory). But potential impressionistic support for the contrary position might be examples like (32), which

show that the successive roll-up chain structure characteristic of head-chains is also sometimes an acceptable alternative option. In (32) there is a focused element (capitalized) in the preverbal focus position characteristic of Hungarian. In (32a) the VM *szét* 'apart' appears to incorporate into the verb *szedni* 'take-INF' creating the unit *szétszedni* 'apart-take-INF'. This new unit incorporates further into *kezdeni* 'begin' in (32b), and the unit *szétszedni kezdeni* 'apart-take-INF-begin-INF' appears to incorporate into *akarni* 'want-INF' in (32c):

- (32) a. *MOST fogom akarni kezdeni {szét} szedni [szét] a*
 now will-I want-INF begin-INF {apart} take [apart] the
 rádiót.
 radio-ACC
 b. *MOST fogom akarni {szétszedni} kezdeni [szétszedni] [szét] a rádiót.*
 c. *MOST fogom {szétszedni kezdeni} akarni [szétszedni kezdeni] [szét-
 szedni] [szét] a rádiót.*
 'I will want to start to take apart the radio NOW.'

The option of roll-up chain structure is not one that standard *wh*/NP-movement chains have. As noted in the previous section, in analyses with successive cascading XP intraposition, noncascading successive intraposition must be sharply prohibited. This is in contrast to the situation here, as (31) appears to indicate.

Szabolcsi (1996) and Koopman and Szabolcsi (2000) take both (31) and (32) to involve phrasal chains. The prediction of mirror theory is that the non-local chain in (31) cannot be head-chain type: morphological words (MWs) cannot skip heads. The roll-up structures of (32), however, can be treated in terms of MWs since the chains here (which MWs will replace under mirror theory) exhibit strictly local links. I shall provide evidence below that the prediction is correct: nonlocal relations like (31) are (syntactic-spec targeting) chains and not MWs. Furthermore I shall argue that the Hungarian verb raising paradigm can be understood only if the roll-up structures in (32) are treated in terms of head-chain type relations, as MWs.

Before proceeding, we need to take account of some data that apparently complicate the situation further. The VM, like the phrase in successive step *wh*/NP-chains, cannot stop in most intermediate positions. But unlike these, it can stop in the lowest of these:

- (33) *MOST fogom (?*szét) akarni (?*szét) kezdeni szét szedni*
 now will-I (apart) want-INF (apart) begin-INF apart take-INF
 [*szét*] *a rádiót.*
 [apart] the radio-ACC
 'I will want to begin to take apart the radio NOW.'

Let us start by asking why the VM appears in front of the finite verb in (31)? Verbs in Hungarian fall into two types, some like *fog* ‘will’ require a VM in a neutral sentence (i.e., one without a focus type operator), others like *utál* ‘hate’ do not allow one. Thus, taking an example with *fog*, (34a) is grammatical but (34b) where no VM precedes this finite verb is not. This is in contrast to the next example with *utál*, here (35a) where the VM precedes the verb is ungrammatical, but (35b) is fine. This consideration excludes also (35c), but both (34c) and (35c) are ruled out additionally because a nontrivial roll-up structure is too large to qualify as a VM. (36) shows that infinitivals can also serve as VMs.

- (34) a. *Haza fogok menni.*
 home will-I go-INF
 ‘I will go home.’
 b. **Fogok hazamenni.*
 c. **Hazamenni fogok.*
- (35) a. **Haza utálok menni.*
 home hate-I go-INF
 ‘I hate to go home.’
 b. *Utálok hazamenni.*
 c. **Hazamenni utálok.*
- (36) *Úszni fogok menni.*
 swim-INF will-I go-INF
 ‘I will go swimming.’

Let us refer to verbs of the class to which *fog* belongs as ‘deficient verbs’. It appears then, that when a deficient V is tensed, it needs a VM like *haza* ‘home’ or the infinitive *úszni* ‘swim-INF’:

- (37) A tensed deficient V needs to be immediately preceded by a VM.

It is necessary to refer to tense in (37) since all the verbs in (33) belong to the deficient class. (37) clearly cannot be allowed to refer also to infinitivals in general, since then a VM would not only be allowed in intermediate positions, but would actually have to occur in all intermediate positions, an incorrect prediction.⁷

Consider next the question of why the VM can show up in the position nearest to the lowest of its chain? Notice that the VM can surface in the lowest position of its chain only if it is an infinitive:

- (38) a. *MOST fogok akarni kezdeni hazamenni / úszni*
 now will-I want-INF start-INF home-go-INF / swim-INF
menni.
 go-INF
 'I will want to start to go home/to go swimming NOW.'
 b. *MOST fogok kezdeni akarni *menni haza / menni úszni.*

We can make sense of this data if we assume first that infinitives are optionally taken to be VMs and secondly that there is a requirement also on VMs that requires them to be supported:⁸

- (39) A VM must be supported by a verb on its right.

It is clear that the requirement to occur in the antepenultimate position cannot be due to a requirement of the host verb. As the bad cases of (33) show, deficient infinitivals do not require a VM to precede them. But the VM cannot remain in situ. Note, additionally, that when the VM shows up to the left of a verb, even if it is to satisfy its own requirement, the host verb must be of a type that licenses the VM:

- (40) a. *MOST fogok akarni utálni / habozni / elkezdeni*
 now will-I want-INF hate-INF / hesitate-INF / away-start-INF
úszni.
 swim-INF
 'I will want to hate/hesitate/start to swim NOW.'
 b. **MOST fogok akarni úszni utálni / habozni / elkezdeni.*

Verbs like *utálni* 'hate-INF', *habozni* 'hesitate-INF', *elkezdeni* 'start-INF' are not deficient, they not just don't require but do not even allow a VM to immediately precede them. (So the deficient V *kezdeni*, that obtained a VM like *el* in *el-kezdeni*, ceases to be deficient, it licenses no additional VM.) In mirror theoretical terms, this means that they can neither form an MW with a VM, nor do they license them as their spec (in V or T or any other associated functional head).

The assumptions so far cover (31) and (33). In the good version of (33) where the VM is to the left of lowest infinitive, the MW or the (degenerate) family-chain was constructed to satisfy the requirement of the VM, i.e., (39). Given some version of last resort,⁹ the VM can surface higher only if some requirement forces it to do so. The infinitivals in (33) carry no such requirement. In the sentence without focus in (31) the matrix tensed deficient verb has its own requirement (37) that justifies the presence of the VM preceding it.

Let us next turn to the evidence that strictly local, head chain-type relations – MWs – are also involved in Hungarian verb raising. Consider (41) and (42). As Szabolcsi observes, focussing the verb allows different interpretive possibilities in the two structures:

- (41) *AKARNI fogok [akarni] kezdeni hazamenni.*
 want-INF will-I [want-INF] begin-INF home-go-INF
 ‘I will indeed want to begin to go home.’ or
 ‘I will WANT to begin to go home (and not, say, TRY to begin to go home).’
- (42) *KEZDENI fogok akarni [kezdeni] hazamenni.*
 begin-INF will-I want-INF [begin-INF] home-go-INF
 ‘I will want to BEGIN to go home (and not, say, TRY to go home).’
 not: ‘I will indeed begin to want to start to go home.’

Both (41) and (42) involve focusing an element of a series of infinitives. Both structures are grammatical, but with differing interpretive options. As indicated by the glosses, (41) can be understood either in an emphatic or in a contrastive sense. (42) can only be understood contrastively, more precisely, in the sense of ‘exhaustive listing’.

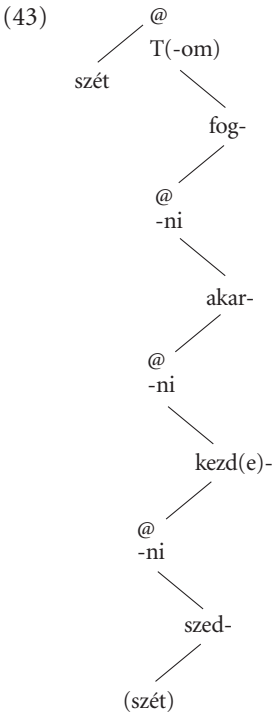
Assume that focusing involves a focus head, F. Phrasal focusing in Hungarian always involves contrast or at least an ‘exhaustive listing’ sense, hence it is natural to assume that the syntactic spec-F position is always taken to imply contrast/exhaustive listing. It is then also natural to suppose that a category marked for focus will be interpreted as expressing emphatic focus unless it is chain-associated with the syntactic spec-F position. Let us assume this.

The contrast in interpretation between (41) and (42) will now follow directly if (syntactic spec targeting) chains and MWs are distinguished. The focus feature of the focus marked category needs to be checked, by the F head. One possibility is to form a chain linking the category to the syntactic spec of F position, the position associated with the contrastive/exhaustive listing interpretation. The other possibility is to make the focus marked category a lexical/morphological specifier of the F node, i.e., to form the MW “akar→ni→fog→ok→F” linking them.¹⁰

(41) and (42) differ in that in the former the highest member of the string of infinitives has been focussed, while in the latter a more deeply embedded one. Hence, if head chains are local and there is no excorporation, then the interpretive properties of (41) and (42) will immediately follow. In standard terms, (41) can involve either an XP chain or a (roll-up) head-chain (with *akarni* incorporated into *fogok* and *akarni fogok* into F). Non-local (42) can only contain the former. Under mirror theory (42) can only involve a chain structure while (41) has both this and the MW option. Recall that the locality of the internal structure of MWs follows from the basic assumption of mirror theory.

It follows now not only from mirror theoretical considerations, but also from the argument based on (41) and (42), that the non-local chain of the VM in (31) must also be a (syntactic-spec targeting) chain. Ignoring the question of the posi-

tion and the chain of the object, the mirror theory analysis of (31) is thus along the lines of (43), where I indicate with an @ sign the spellout position of the MWs.



Szét fogom akarni kezdeni szedni [szét] a rádiót.
apart will-I want-INF begin-INF take-INF [apart] the radio
'I will want to begin to take apart the radio.'

But we still have no reason to consider the chains involved in successive roll-up structures to be family-chains. As we will see, we in fact have good reasons not to. But let us ask first what forces the construction of roll-up chain structures, or MWs in the present theory? We know that the lowest element, a VM, must, in standard terms, either form an XP or a head-chain to satisfy its own requirement (39). In present terms it must either form a chain or participate in an MW. How about the verb above the VM? Why does it have the same requirement in these structures? The obvious assumption is that the +VM feature percolates to it. While this must in some sense be right, the assumption cannot be quite correct: as we have also seen above in connection with (34c) and (35c), the roll-up structure cannot be in the usual neutral VM position preceding the finite verb:

- (44) a. *{Szétszedni} fogom akarni kezdeni [szétszedni] [szét] a rádiót.
 b. *{Szétszedni kezdeni} fogom akarni [szétszedni kezdeni] [szétszedni] [szét] ... a rádiót.

Suppose then, that VMs have some feature, call it +prefix, that forces them to ‘incorporate’, i.e., form part of a larger MW in which they precede some other element. We can then assume that it is this +prefix feature that percolates (optionally) to higher elements making them subject to the same requirement. The larger units created in this way do not qualify however as VMs, and only VMs are licensed in the tensed preverbal position of deficient verbs.

- (45) a. +VM \rightarrow +prefix
 b. +prefix can percolate up MW-internally (optional)

We need accordingly to modify the licensing conditions: nondeficient infinitivals not only do not license a VM but more generally do not license a +prefix category on their left:

- (46) *MOST fogok hazamenni kezdeni utálni.
 now will-I home-go-INF begin-INF hate-INF
 ‘I will begin to hate to go home NOW.’

Similarly, as (32) shows, licensing of a VM by verbs on their left is in fact more generally a question of licensing a +prefix marked element.

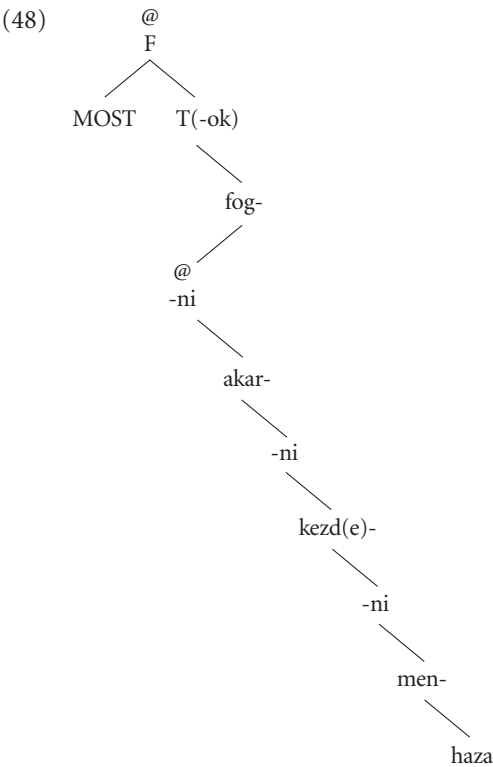
Given this much background, (47) provides the evidence that roll-up structures indeed involve MWs and not chains (head-chains and not XP-chains in standard terms).

- (47) a. MOST fogok hazamenni kezdeni akarni.
 now will-I home-go-INF begin-INF want-INF
 ‘I will want to begin to go home NOW.’
 not: ‘I will begin to want to go home NOW.’
 b. MOST fogok hazamenni kezdeni akarni [hazamenni kezdeni] [hazamenni] [haza]
 c. *MOST fogok hazamenni kezdeni akarni [hazamenni] [haza]

As we have seen in (31), the VM can move long distance (presumably in successive steps) in a non roll-up fashion. But once a roll-up structure is formed as in (32), the top element of the roll-up structure can only form nontrivial chains by further roll-up, it is generally not allowed to form chains in successive non roll-up steps. For example, (47a) can only be interpreted with *akarni* ‘want-INF’ having scope over *kezdeni* ‘begin-INF’, i.e., the structure must be the fully roll-up (47b) and not the partially roll-up (47c) where *haza* ‘home’ appears to incorporate into *menni*

‘go-INF’ and then *hazamenni* forms a chain that crosses the two heads *kezdeni* and *akarni*.

If these roll-up structures can only involve head-chain type relations, i.e., MWs, then the facts of (47) will automatically fall out, since MWs cannot exhibit non-local relations. The mirror theory analysis of (47) is then like (48), where again @ indicates spellout positions of complex morphological words.¹¹



Notes

* This paper is a slightly revised version of Chapter 4 of Brody (1997b), with references and some other more or less technical matters updated. Chapter 3 of that ms. corresponds to Brody (2000a). For more discussion of the proposals made in Section 1, especially concerning c-command in the proposed structures see Brody (2000a) and now also Brody and Szabolcsi (2003). The summary of mirror theory in the introduction above is from Brody (2000b).

1. As the argument crucially uses the presence of the complement C, the derivation of the lack of word-dominated phrases needs the assumption, as Kayne notes, that the source for the phrase P must be internal to the complement C. I.e., if there is no complement then there is no source for the phrase. This might still be problematic if empty categories, hence empty complements, do not need to be ordered by the LCA.

2. On these, see Kayne (1994:Section 3.7).

3. The strength of this argument is weakened by the apparent existence of another reason for the difference. As Phillips (1996) points out, there seems to be a preference for fronted VPs to be potentially complete. He gives examples like the following (the goal argument is optional with *give* but obligatory with *hand*):

(i) ?... and [give candy] he did to the children on weekends.

(ii) *... and [hand candy] he did to the children on weekends.

4. Another issue (raised, e.g., by Manzini 1995 against the family of solutions I am considering here) that we can also put aside here is that of extraction.

(i) *Who did you say that we sent there in order to please John's mother?*

(ii) ?**Who did you say that we sent him there in order to please t?*

Extraction on this analysis must be possible from a left branch as in the case of (4)/(i) but not from the main branch (ii). But at least the former is a general problem in the anti-symmetry framework, not directly linked to the analysis of (4). Indeed the problem arises in the minimalist framework even without antisymmetry given object shift to AgrO. In these approaches extraction from left branches will often be necessary, creating problems for connectedness (Kayne 1983; Manzini 1992) type approaches to locality.

5. Cinque in fact assumes also another, VP internal, source for ‘circumstantial’ adverbials.

6. Most Hungarian examples that follow are from Szabolcsi (1996) and from references cited there.

7. It is not clear if the tensed deficient verb will have the requirement (34) for VMs when there is a focussed element in the clause.

(i) *MOST fogom szét [fogom] próbálni szedni a rádiót.*
 now will-I apart [will-I] try-INF take-INF the radio
 ‘I will try to take apart the radio NOW’.

Szabolcsi (1996) and others take structures of this type to be impossible, but (i) seems acceptable to me. If there are grammatical structures like (i) then we may assume that (37) needs to be satisfied by some member of the chain of V. In (i) *szét* satisfied (37) for the trace of *fogok*. The verb is then spelt out in the position of E, the (empty) focus morpheme.

If structures like (i) are invariably bad then (37) must be restricted to verbs that are not associated with focus. If in such structure the tensed verb has a focus feature (Brody 1990, 1995b), then we may take this feature to transform a deficient V into a nondeficient one, or essentially equivalently, serve as a VM for (37).

8. In a series of infinitives only the last one can be taken as a VM. For example (38a) cannot be analyzed as *akarni* ‘want-INF’ being a VM that is linked to a position under *kezdeni* ‘begin-

INF', the relevant interpretation of (38a) (i.e., 'will begin to want to...') is not available. The restriction does not appear to be simply that only infinitives without complements can serve as VMs: infinitives with noninfinitive complements can be spelt out higher, without any special (emphatic/contrastive) interpretation:

- (i) *MOST fogok (/fogom) olvasni akarni [olvasni] egy (/a) könyvet.*
 now will-I read-INF want-INF a (/the) book
 'I will want to read a/the book NOW.'
- (ii) *MOST fogom közölni akarni [közölni], hogy Mari elment.*
 now will-I state-INF want-INF that Mary left
 'I will want to state that Mary left NOW.'

9. Last resort does not need to be a derivational condition (Brody 1997b). Translated to representational terms, it requires all non-root positions of chains to be licensed by some (checking) requirement. Under the representational version, the relationship of last resort and full interpretation is immediately brought out, and it is natural to generalize the condition to require that all positions (in chains / in syntactic structures) are licensed by some (checking or thematic) relation.

10. Notice that in this MW the focus marked *akar* is not directly the spec of F, but rather the spec of the spec of the spec of F. Putting aside the technical question (percolation or satisfaction of the checking relation at a distance), note that the problem here is a special case of a much more general issue. Thus in (i) the syntactic spec of F position is occupied by a nonfocus category whose spec is the actual focus.

- (i) *JÁNOS barátja hívott fel.*
 John's friend called up

The same problem arises also in the definition of *wh*-phrases, etc.

11. In fact, the generalization that roll-up structures are not able to form long distance chains does not hold in all types of structures. As noted earlier, nontrivial cascades like the ones in (32) do not qualify as VMs and therefore cannot appear before the finite verb in the VM position. The focussing structures in (i-b), (i-c), and (i-d), however, contain a nonlocal chain of the roll-up structures *szétszedni*, *szétszedni kezdeni* and *szétszedni kezdeni akarni*, respectively.

- (i) a. *SZÉT fogom akarni kezdeni szedni a rádiót.*
 'I will want to begin to take APART the radio.'
- b. *SZÉTSZEDNI fogom akarni kezdeni a rádiót.*
- c. *SZÉTSZEDNI KEZDENI fogom akarni a rádiót.*
- d. *SZÉTSZEDNI KEZDENI AKARNI fogom a rádiót.*

Consider the nonlocal relations between the focus position and the position where the roll-up structure is assembled. The prediction of the mirror theory is of course that these relations must be chains and not MWs.

Thus a roll-up structure can form a chain when such chain formation is triggered by some checking requirement, e.g., focus in (i). The chain structure in (47c) is not legitimate how-

ever, since the higher chain member satisfies no requirement (of its own or of its host) there.

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The structure of clusters

Edwin Williams

In this paper, I will explore the role of a simple language family (“CAT”) in the analysis of verb clusters. In Williams (2002), CAT is explored as a model of verbal inflection. After briefly reviewing the definition of CAT and its application to inflectional morphology (Section 1), I apply it directly to the verb clustering found in Germanic and Hungarian (Section 2).

1. Modeling inflection

The verbal inflectional system of a language is a means of expressing the functional structure of a clause on its verbal head. Following findings of Pollock (1989), Cinque (1999) and others, we take the functional structure of a clause to consist of some universal set of functional elements in a fixed universal hierarchical relationship:

$$(1) \quad F_1 > \dots > F_n$$

Call this the ‘functional chain’. It consists of the main verb and the inflectional structure of the clause. The individual F s might include Tense, AgrS (subject agreement), Mood, ‘Celerative modification’ (cf. Cinque 1999), Aspect, and the like. A given language might express some large or small subset of these inflectionally. The question is, what orderings of morphemes can realize such a functional chain?

One particular ‘Verb movement’ theory gives rise to a specific expectation: if verb movement is always ‘left adjunction’, then verb movement gives rise to the expectation that the inflected verb will have the following form:

$$(2) \quad V + af_n + \dots + af_1 \quad \text{where } af_i \text{ realizes } F_i$$

It is well-known that inflectional morphologies that ‘mirror’ the functional structure of the clause in such a transparent way are rare (see discussion of specific cases in Section 1.2, and also in Williams 2002: Chapter 8). How then are the discrepant

cases to be dealt with? A possible answer is a set of ‘readjustment rules’ whose job is to close the discrepancy. The problem with such rules is that they too easily accommodate mis-analyzed data and so are no guide to further progress.

CAT gives a different answer – CAT is a severely restricted generative device that says precisely what the discrepancy is, and exactly in what ways languages can vary.

In the simplest case, the functional chain is fixed universally, and I will assume this, though the result to be reported is substantially the same under different assumptions, though then of course the situation is empirically more opaque.

1.1 The language CAT

The language CAT is a set of elements F_i , in a chain, so that each F_i ‘subcategorizes’ for F_{i+1} , and the following ‘Rule of Combination’ (RoC):

(3) RoC:

$$X_Y + Y_Z \rightarrow [X+Y]_{X_Z}$$

‘ X_Y ’ designates a thing of type X which ‘takes’ as complement a thing of type Y; the rule then says, if a thing of type X taking a thing of type Y is combined with a thing of type Y taking a thing of type Z, the result is a thing of type X taking a thing of type Z. The rule thus combines X-bar ‘percolation’ (if the head is an X, the result is an X) with a rule that has been called ‘Geach’s Rule’ (the subcategorization of the non-head (that is, ‘the complement’) is the subcategorization of the whole. Issues of the order of X and Y will be taken up later.

The inclusion of Geach’s rule in RoC makes CAT similar to Categorical grammar, but without ‘lifting’ operations, so (3) is far too weak for the applications that full Categorical grammar is put to. From our point of view, the weakness is deliberate, since we can now discriminate among systems which CAT can, and cannot, model.

A system modeled by CAT will consist of a functional chain and various ‘spannings’ of the chain by morphemes. A morpheme ‘expresses’ some subsequence of the functional chain. To be concrete, suppose that English has the functional chain ‘Tense > AgrS > AgrO > V (with AgrO included on the grounds that the chain is universal, and where V here takes a nominal complement). Assume as well that $V > N$ (or $V > D$), that is, verbs take direct objects. Suppose further that the following definitions hold:

- (4) a. ‘-ed’ expresses ‘Tense > AgrS’
 b. ‘v’ expresses ‘AgrO > V’

Then ‘v’ and ‘-ed’ can be combined by CAT as follows:

$$(5) \quad V_{_NP} + -ed(T)_{_V} \rightarrow Ved, T_{_NP}$$

That is, $V+ed$ is a T type object taking a direct object, just the right properties for a verb like *cleaned*, for example. Again, the issue of the order of the combined elements will be taken up shortly.

But CAT can derive some more peculiar representations. It can, in some language with object agreement, derive an element which ‘is an’ $AgrS$, and which takes a V as its complement, by directly combination of morphemes expressing $AgrS$ and $AgrO$:

$$(6) \quad af_{AgrS, _AgrO} + af_{AgrO, _V} = af + af_{AgrS, _V}$$

Such a derived element would enter the expression of the complete functional chain in the following way:

$$(7) \quad af_{T_AgrS} + [af + af_{AgrS, _V}] + V$$

Thus, CAT allows for ‘clumpiness’: the form in (6) is a ‘clump’ in the form in (7), and thus provides for this kind of deviation from a ‘right linear’ expression of inflectional morphemes indicated in (2).

To make more precise the properties of CAT, we must make more precise the notion ‘subcategorization’. In order to generate different orders of morphemes, we will relax the interpretation of the subcategorization notation. The traditional notion of subcategorization bundles together three different types of information: type, order, and level.

(8) Subcategorization:

1. type (N vs. V, etc.)
2. order (left vs. right)
3. level (root vs. stem; X^0 vs. X^N)

So “ $_NP$ ” encodes the idea that the verb takes a nominal object (N), that it takes it to the right ($_X$), and that it takes a phrase-level complement (NP as opposed to N). I want to investigate the properties of the language which results from relaxing the order and level restrictions, retaining only type subcategorization. Relaxing the order restriction means that if V takes $N(P)$ as a complement, then it can take it to either the right or the left [$V N$] or [$N V$]. In order to eliminate ambiguity as to which element takes which as complement in a structure, I will introduce the carat sign between the head and complement, with the narrow end pointing to the complement; so if V takes an N complement, then both of the following constructions are licensed:

- (9) a. [$N < V$]
 b. [$V > N$]

I will now define CAT to be the language that is generated by a set of elements in head-complement order under the Rule of Combination, where subcategorization specifies type only, leaving level and order free.

- (10) $CAT = \{A(_B), B(_C), C(_D) \dots + CAT \text{ rule}\}$
 CAT uses “type” subcategorization only

Put differently, CAT is the set of permutations that arise from suspending order and level subcategorization. I will now proceed to determine some properties of CAT with an eye to evaluating its role as a model of some linguistic systems, inflectional morphology among them.

The first thing to establish is the relation of CAT, where order and level are relaxed, to the “language” one gets when they are enforced. When the elements in (10) are combined with order fixed and without the inheritance of subcategorization, but only the projection of head type, the set of elements determine a single structure, which I will call the Right Linear String (RLS).

- (11) Right Linear String: $[A > [B > [C > [D > [E]_E]_D]_C]_B]_A$

The RLS is the model of Pollock–Cinquean clause structure, and, via the Mirror Principle, the model of inflectional morphology which is widely assumed.

The RLS bears a particular relation to CAT that which we may explicate by defining two CAT-preserving operations, FLIP and REASSOCIATE.

- (12) a. FLIP: if $X = [A > B]$, A and B terminal or nonterminal,
 $FLIP(X) = [B < A]$
 b. REASSOCIATE: if $X = [A > [B > C]]$,
 $R(X) = [[A > B] > C]$

It can be shown that FLIP and REASSOCIATE are CAT-preserving: if an input string is CAT, then any number of such operations will not take it out of CAT; see Williams (2002). It can also be shown that CAT itself can be generated from the RLS by the operations of FLIP and REASSOCIATE.

Therefore,

- (13) $CAT = RLS+$

where by “RLS+” I mean the language generated from RLS by FLIP and REASSOCIATE.

The properties of CAT just identified are useful in discussing CAT as a model of linguistic systems. By virtue of FLIP and R, CAT can be taken as a model of systems that appear to involve *movement*. In fact, CAT, via RLS+, mimics movement of constituents of arbitrary size, over arbitrary distances. To see this, consider the RLS

in (14) below, and whether H in that structure could be moved to the position between B and C:

- (14) FLIP and REASSOCIATE can effect long-distance moves, of any node to any higher position:

a. $[A > [B > [C > [D > [E > [F > [G > [H > [I]]]]]]]]]]$



Derivation:

b. $[A > [B > [C > [D > [E > [F > [G > [H > [I]]]]]]]]]]$

→ REASSOCIATE:

c. $[A > [B > [[[[[[C > D] > E] > F] > G]]]]]] > H] > [I]]$

→ FLIP:

d. $[A > [B > [H < [[[[[[C > D] > E] > F] > G]]]]]] > [I]]$

The derivation is given in (14b–d); first a series of Left-reassociations is done, gathering together all of the material intervening between the moving item and the landing site, and then a single FLIP effects the movement. It is important to understand that as far as CAT is concerned, there is no movement; rather, there is a theorem that if (14b) belongs to CAT, then so does (14d); FLIP and R are simply a way of thinking about this via the RLS+ interpretation. Nevertheless, these conclusions invite us to consider CAT as a model of linguistic structures that appear to involve movement.

While a single unbounded movement is allowed, multiple movements are quite constrained. The FLIP operation in (14d) reverses the carat, thus blocking any further REASSOCIATION, and hence any further movement in the vicinity of the movement path will be blocked; in particular, there will be

- (15) 1. No movement of the moved constituent
 2. No movement out of the moved constituent (where it is complex)
 3. No movement out of extracted-from constituents

I will now try to give some assessment of how big CAT is. If the set of base elements is finite, as it is in the cases we intend to model, CAT itself is finite. As I characterized it earlier, for some fixed chain of elements in the complement-taking relation, CAT defines some set of permutations of those elements. The full set of permutations of n elements (call it P) has $n!$ elements ($n \times (n - 1) \times (n - 2) \dots \times 2$). As n grows, the size of CAT becomes a tiny subset of P ; for this reason, any system that resembles CAT most likely *is* CAT.

For three elements, CAT is actually identical to P , but for any larger n it is not:

- (16) suppose: $1 > 2 > 3 > 4 > 5$; then:
- 3: 1 2 3 1 [3 2] [2 3] 1
 $[2 < 1] > 3$ $3 < [1 > 2]$ $3 < [2 > 1]$
- 4: 1 2 [3 > 4] 1 2 [4 < 3] $1 > [[3 < 2] > 4]$
 3 [1 2] 4 *3 1 4 2 *2 4 1 3
- 5: *3 1 5 2 4 etc.,

The starred strings are the nonCAT strings for n of 3, 4, and 5. To see that they are nonCAT, try to build a parse-tree for them bottom up; for the examples given, there is no way to start building the tree, because no adjacent elements are combinable in either direction (this does not however characterize all failures of strings to be in CAT).

In what follows, I will try to give some idea of how fast CAT grows relative to P. In (17), I give a table which shows how many elements of P are excluded from CAT for $= 1 \dots 9$. The right column shows the percentage excluded. Evidently, CAT becomes a vanishing portion of P.

(17)	#	total : excluded-from-CAT	% excluded
	3	6 : 0	0
	4	4 : 2	8.3%
	5	120 : 30	25%
	6	720 : 326	45.3%
	7	5,040 : 3,234	64.1%
	8	40,320 : 31,762	78.8%
	9	362,880 : 321,244	88.5%

1.2 Inflectional systems as an instantiation of CAT

Suppose that we have a fixed universal chain of elements in the complement-relation, as in (18):

- (18) Universal: AgrS > T > Aspect > AgrO > V,
 or perhaps T > AgrS > Aspect > AgrO > V
 (*type subcat only*)

the carat ($X > Y$) means “X takes things of type Y as complement”, but with no restriction on the linear order of the elements, or on the “level” of the elements (as in “bar level” in X-bar theory).

CAT with (18) as its base is clearly not a good model of any particular language’s inflectional morphology, as no language has inflectional morphology where, for example, the past tense affix may freely occur either before or after the verb (corresponding to FLIP). Any given language will fix the linear order. In ad-

dition, any given language will fix the “level” at which items attach, in a way that I will make precise.

We might say that CAT models inflectional morphology in the sense that CAT sets the limits of what is available as a realization of the universal chain in (18), but that any particular language will impose order and level constraints on the subcategorization of particular items that will yield some subset of CAT. In particular, it would be interesting to explore the possibility that the *only* way inflectional systems can differ is in terms of these two things; (19) is an attempt to formulate this hypothesis:

(19) Lexical Variation Hypothesis:

Language-particular inflectional systems differ only in

- a. order restrictions
- b. level restrictions

on the subcategorizations of individual morphemes or classes of morphemes

The Lexical Variation Hypothesis is independent of whether CAT is a good model of inflection in general; it could be that CAT sets accurate bounds on what permutations of elements in general can instantiate the chain in (18), but the way languages differed within that bound is something other than (19). In the following, I will be evaluating LVH as well as CAT, but CAT is the main prey.

The “order” restriction determines the difference between prefix and suffix for morphemes, and the difference between head-initial and head-final order in syntax.

The “level” restrictions have to do with what “size” the complement must be. The details depend on assumptions about what units are available in the first place. We may identify two cases of interest in the following discussion. One, already mentioned, will be the difference between word and phrase; the subcategorization $_N$, for example, I will take as ambiguous between $_N^0$ and $_NP$. In addition, we will need recourse to levels in morphological structure, the most familiar version of which is the *root/stem/word* distinction introduced in Selkirk (1982), where stems are made out of roots, but not vice versa, and words are made out of stems, but not vice versa, giving us a three-way distinction in level. So we will allow a language to impose a restriction on an AgrO morpheme, for example, that it attach to a verb root, and not to any other level of verb, in accordance with the LVH.

In Williams (2002) a number of inflectional systems are investigated. For each language, two questions are asked. First, is the order of inflected elements a CAT order or not? Second, is there a reasonable specification of order and level restrictions on the morphemes that instantiate the functional elements that will yield the

particular shape of the inflected word in that language? The first question addresses CAT by itself, the second, CAT plus LVH.

In order to have a verbal morphology, a language needs a set of morpheme classes that “span” the functional chain. Recall that a morpheme can span subchains of the functional chain through fusion, which arise when one of the morphemes that RoC combines is a null morpheme. In general, the fusions one finds in a language will be systematic – for example, in English, AgrS and T *always* fuse. Such generalizations are a part of the *lexical style* of the language, but, while fascinating in their own right and essentially not understood, are not directly the subject at hand.

- (20) a spanning vocabulary:

$$F_1 > F_2 > F_3 > F_4 > F_5 > F_6$$

|— m_1 —|

|— m_2 —|

|— m_3 —|

If RoC generates m_1 , m_2 , and m_3 , then it is guaranteed that m_2 can combine with m_3 , and the result of that combination can combine with m_1 , and so [m_1 [m_2 m_3]] will span the functional structure. The spanning vocabulary might be affixes, in which cases single inflected words will span the functional structure, or it might be words, in which case syntactic constructions will span the functional architecture (giving rise to what are called auxiliary verb systems), or it might be some combination of the two, as in English, where the spanning vocabulary consists of both words and roots and affixes:

- (21) T > AgrS > Asp > AgrO > V

|—*was*—|

|—*seeing*—|

Was is a word that spans T and AgrS; *seeing* is a (derived) word that spans AgrO, Aspect, and V (under the assumption that AgrO is universally a part of the chain). *Was* and *seeing*P can be combined in syntax, since *was* is a T, _AspP element, and *seeing*P is a projection of the AgrO element *seeing*:

- (22) a. In lexicon:

ing: AgrO+Asp, _V

see: V, _NP

derivation of *seeing*:

see + *ing* → *seeing*

Asp, _NP

b. In syntax:

was: T, _AspP*seeing*: AspP, _NPderivation of [*seeing* NP]:*seeing*: AspP, _NP + NP → [*seeing* NP]_{AspP}[*was*] + [*seeing*]_{AspP} → [*was* [*seeing* NP]]_{TP}

Importantly, it is the RoC that is responsible for the operations in both syntax and morphology, the only difference being that in morphology RoC is combining X⁰ level things, whereas in syntax it is combining X⁰ and XP level things; but this is *the* characteristic difference between syntax and morphology anyway.

An obvious difficulty for the notion of “spanning vocabulary” as it arises from the RoC, is the existence of “multiple exponence”. Multiple exponence is the expression of a single functional element on more than one morpheme in an inflected verb. Multiple exponence should be impossible under the regime of the RoC. This is because if a feature is in two morphemes, there is no way those morphemes could be combined by the RoC – the subcategorization of one can never match the type of the other, nor can they be hooked together by any intermediate morphemes, for essentially the same reason. An account of multiple exponence is given in Williams (2002). The exact nature of the account is not relevant to verb clustering, and so will not be repeated here.

1.3 Some inflectional systems

The program of investigation suggested by the above is to inventory the world’s inflectional systems, with an eye to two things: first, to determine whether CAT plus a universal base of functional elements sets the proper outer bounds on what an inflectional system can do to represent functional elements; and second, to see if the details of word shape in particular languages can be arrived at by specifying level and order restrictions on particular morphemes or classes of morphemes, in accordance with the LVH. In Williams (2002) this program is carried out in a somewhat systematic if not fully conclusive fashion; here, I will present only some representative findings, before turning to verb clusters.

The simplest sort of language of course instantiates the RLS directly. Such languages do exist, though are far from the majority system. Next in the scale of complexity is a language with some fusion. Consider for example Mohawk, whose verbal inflectional system looks like the following:

(23) Mohawk

a. T > AgrS > AgrO > V

[T > [AgrS = AgrO [> V]]

(Baker 1996)

- b. T: prefix, T_AgrS
AgrS = AgrO: prefix arising from fusion: AgrS_V
V: stem.

Here the symbol ‘=’ indicates fusion. (a) shows the match between functional elements and morphemes – it is one-to-one except for the fusion of AgrS and AgrO. Note that Mohawk requires the order $T > \text{AgrS}$, so that AgrO and AgrS can fuse; it remains to be seen if that order is universally feasible. (b) shows the language-specific specifications that determine the shape of the inflected verb.

We now turn to cases more problematic for theories which essentially expect the RLS (or LLS) as the only realization of the functional elements: Navaho, in which AgrS intervenes between AgrO and V:

- (24) Navaho
- a. AgrO Asp T AgrS V
- b1. $[\text{AgrO} < [\text{Asp} < [\text{T} > \text{AgrS}]]] > \text{V}$
T: prefix
AgrS: stem
Asp: prefix
AgrO: prefix
- b2. $[[[\text{AgrO} < \text{Asp}] < \text{T}] < [\text{AgrS} > \text{V}]]$
T: suffix
Asp: suffix
AgrS: suffix
AgrO: stem

There are two ways to parse the structure in (a) in CAT terms, depending on whether $T > \text{AgrS}$ (b1) or $\text{AgrS} > T$ (b2). The lexical specifications needed to force the analysis is given below each parse. Mohawk and Swahili both require $T > \text{AgrS}$, so we might want to tentatively assume that as the universal order and therefore favor (b1). In behalf of the (b2) parse is the uniformity of affixation to the AgrO stem; although mixed systems exist with both prefixes and suffixes, the economics of the lexicon may favor uniform prefixation or suffixation. I leave the question open.

1.4 Verb (Projection) Raising as an instance of CAT

We now turn to an application of CAT outside of inflectional morphology. In fact, I believe the applications of CAT outside of morphology are quite numerous, and have only picked Verb Projection Raising as an illustration. My best guess is that CAT is the relevant model of a system which involves only the playing out of lexical specifications of type, order, and level.

The analysis presented here is based on the discussion of the phenomenon in Haegeman and van Riemsdijk (1986). The model presented below incorporates insights from their work, but rejects the role of movement in the system, deriving all forms directly by the RoC and lexical specifications of order and level.

Example (25) illustrates Verb Raising in Dutch. (a) is the deep structure, in the Haegeman and van Riemsdijk (H&vR) model, which is ungrammatical; (b) is the Verb Raising structure:

- (25) Dutch:
- | | | | |
|----|------------------------------------|------|--------------|
| a. | <i>*dat Jan een huis kopen wil</i> | “DS” | NP < V < V |
| b. | <i>dat Jan een huis wil kopen</i> | VR | NP < [V > V] |
| c. | <i>*dat Jan wil een huis kopen</i> | VPR | V > [NP < V] |
- ‘that Hans a house buy will’ (H&vR 416)

In the Verb Raising construction, an embedded verb is raised out of its complement and adjoined to the matrix verb, to the right; in the Verb Projection Raising construction, the same operation is performed on an embedded VP. (c) is the Verb Projection Raising structure, which is ungrammatical in Dutch.

While Verb Projection Raising is ungrammatical in Dutch, it is found in some other Germanic dialects:

- (26) West Flemish:
- | | | | |
|----|----------------------------------|-----|--------------|
| a. | <i>da Jan een hus kopen wilt</i> | | NP < V < V |
| b. | <i>da Jan een hus wilt kopen</i> | VR | NP < [V > V] |
| c. | <i>da Jan wilt een hus kopen</i> | VPR | V > [NP < V] |
- (27) Swiss German:
- | | | | |
|----|---------------------------------------|-----|--------------|
| a. | <i>das de Hans es huus chaufe wil</i> | | NP < V < V |
| b. | <i>das de Hans es huus wil chaufe</i> | VR | NP < [V > V] |
| c. | <i>das de Hans wil es huus chaufe</i> | VPR | V > [NP < V] |
- (H&vR 416)

We will analyze the VR and VPR constructions as an instantiation of CAT. This means that CAT sets the outer bounds on the form that these constructions can take. It furthermore means that all variation will be found in the level and order subcategorizations of predicates or classes of predicates. In the right margin of the constructions listed above are the CAT representations.

If we were to interpret CAT as RLS+ (or, more appropriately, LLS+: just like RLS+, but with the Left Linear String (LLS) instead of RLS as the base), then we would take (26a) as the LLS, and we would take $[[NP < V_1]_{VP} < V_0]$ as the base structure, and applying REASSOCIATE and FLIP, derive $[NP < [V_0 > V_1]]$, which is the Dutch Verb Raising structure. Some mechanism would be needed to guarantee that REASSOCIATE and FLIP applied obligatorily in this case.

We will instead model V(P)R directly as CAT, in accordance with the LVH. Under this interpretation, FLIP will correspond to order:right, absence of FLIP to order:left, and optional FLIP to unspecified order; Left-REASSOCIATE will correspond to level:X⁰, which gives Verb Raising; failure to Left-REASSOCIATE will correspond to level:XP, and optional Left-REASSOCIATE will correspond to unspecified level. It seems to me that the entire range of constructions discussed by H&vR can be described in these terms.

Dutch, for example, obligatorily FLIPs embedded verbs, but never VPs; in our terms, this means that the verbs in question have the subcategorization in (28a). Modal verbs are exceptional in that they FLIP optionally.

- (28) a. $_V^0$
 b. *dat ik hem zien wil_M*
 that I him see want
 c. *dat ik hem wil_M zien* (H&vR (22), 426)

In CAT terms, this means that they have the order parameter unset; or, equivalently, they have the additional subcategorization in (29):

- (29) $V^0 _$

There is an unexpected exception to (29) – only basic Vs, not V⁰s that are themselves complex verbs, take their complements to the left:

- (30) a. **dat ik hem kunnen zien wil_M*
 that I him can see want
 b. *dat ik hem wil_M kunnen zien* (H&vR (22), 426)

This restriction is intuitively a level constraint: complex [V V] structures are “bigger” than simple Vs. If we use the term “stem” in such a way that it includes simple Vs, but excludes V-V compound verbs, then we could add the level restriction to (29) to get (31):

- (31) $V^0_{\text{stem}} _$

In all of these cases, the derived verb cluster has the same subcategorization as the complement verb in the cluster, as determined by the RoC. As a result, *hem* is the direct object of the complex cluster in (30b) for example; so the CAT structure of that example is:

- (32) *dat ik [hem < [wil > [kunnen > zien]_V]_{VP}*

German has obligatory FLIP for Auxiliary verbs (H&vR (24)–(25), 427), but optional FLIP for Modals; these are straightforwardly treated as order constraints on the model of Dutch.

West Flemish obligatorily FLIPS either the V or the whole VP around a Modal or Auxiliary, as in (26); the order and level restrictions that account for this are:

- (33) M,A: _V

The notation “_V” is to be understood as “V⁰ or VP” – that is, no level constraint is applied, and so we get both Verb Raising and Verb Projection Raising.

We will now turn to the complexities that arise when a series of VPs are involved in a Verb Projection Raising in Swiss German. We will see that the lack of any level constraint in (34) accounts precisely for a complex array of possible outcomes. The possible orders of a series of four verbs where the lowest takes a direct object are listed below:

- (34) a. *das er [[en arie singe] chone] wele] hat*
 that he an aria sing can wants has
 b. $N < V_4 < V_3 < V_2 < V_1$
 c. V1 NP V2 V3 V4
 d. V1 V2 NP V3 V4
 e. V1 V2 V3 NP V4
 f. *V1 V2 V3 V4 NP (Swiss German; H&vR (28), 428)

The verbs must all appear in FLIPPED order; the direct object can appear anywhere in the series except after the most deeply embedded complement. This patterning follows immediately from the stipulation in (34), coupled with the further stipulation that no verb that takes a direct object can take it on the right:

- (35) a. M,A, _V
 b. V, NP_

The absence of a level constraint in (35a) corresponds in RLS+ to optional REASSOCIATION; FLIP is obligatory, so the verbs always appear in exactly reverse order (the reverse of (17b)).

- (36) Swiss German clustering as described in RLS+:
- a. REASSOCIATE at will.
 - b. FLIP all $V < V$ nodes (for complex as well as simple Vs)
 - c. FLIP no $NP < V$ nodes (for complex as well as simple Vs)

Swiss German clustering reduced to lexical stipulations on CAT:

- d. V₂, NP_
- e. V₁, _V

Derivation of a Swiss German complex verb in CAT:

- f. $V_1 + V_2 \rightarrow [V_1 > V_2]_V, NP_$

The stipulation in (b, c) that FLIPPING is forced (or fails) for both complex as well as simple Vs taking direct objects follows from RoC, and so does not count as a separate stipulation: if a complex verb is formed by putting together a Modal or Auxiliary with a transitive verb, the subcategorization of the transitive verb will be inherited, including any order restriction, as the RoC dictates – (f) is the result of combining (d) and (e) with RoC. So the extra stipulation in (c) is not part of the theory, but rather is added for clarification.

(36a–c) can generate all of the patterns in (17). To derive (17d), for example, we perform the following REASSOCIATION and then obligatory FLIPPING:

- (37) [[[[NP < V₄] < V₃] < V₂] < V₁]
 REASSOCIATE:
 → [[NP < [V₄ < V₃]] < V₂] < V₁]
 FLIP:
 → [V₁ > [V₂ > [NP < [V₃ > V₄]]]]

It is important to remember that FLIP and REASSOCIATE are not essential to the analysis; rather, they are just a way to think about CAT. The entire analysis is (35) by itself.

A further consequence is that when there are two arguments of the embedded verb, they may individually appear anywhere among the set of reanalyzed verbs, so long as they do no exchange places; the verbs will be ordered amongst themselves exactly as in the one-argument case (17).

- (38) *das er em Karajan₁ en arie₂ vorsinge₃ chone₂ wil₁*
 that he to Karajan an aria sing.for can wants
 a. NP₁ NP₂ V₁ V₂ V₃
 b. NP₁ V₁ NP₂ V₂ V₃
 c. V₁ NP₁ V₂ V NP₂ V₃
 d. V₁ NP₁ NP₂ V₂ V₃
 e. V NP₁ V₂ NP₂ V₃
 f. V₁ V₂ NP₁ NP₂ V₃
 g. *...NP₂...NP₁...
 h. *...V₃...N... (H&vR (31), 229)

In order to treat these cases as CAT, we must have some means of representing verbs that take two arguments. We will adopt the “small clause” analysis:

- (39) [[NP < NP] < V]

Given this, we can derive all of the patterns in (38) from the stipulations in (36). In terms of FLIP and REASSOCIATE, we can derive all of the patterns in (38) from (38a); for example, by REASSOCIATING (38a) to (40a), we may then FLIP to get (f);

or to (40b), and then flip to get (38d); or with no REASSOCIATION, and then FLIP to get (b).

- (40) a. $\rightarrow [[[NP_1 < [NP_2 < V_3]] < V_2] < V_1] \rightarrow \text{FLIP}$
 $[V_1 > [V_2 > [NP_1 < [NP_2 < V_3]]]]$ (f)
 b. $\rightarrow NP_1 < [[NP_2 < [V_3 < V_2]] < V_1] \rightarrow \text{FLIP}$
 $[V_1 > [NP_1 < [NP_2 < [V_2 > V_3]]]]$ (d)
 c. $[NP_1 < [V_1 > [NP_2 < [V_2 > V_3]]]]$ (b)

As in the previous example, FLIP and REASSOCIATE play no role in the analysis, which is completely determined by (35).

The success of CAT in modeling V(P)R is considerable, and the evidence for LVH is compelling as well. With very simple lexical stipulations about subcategorization of individual lexical items or classes of lexical items – mechanisms that it is hard to see how any theory could forgo – we have succeeded in modeling V(P)R as described by H&vR, but without movement and without the novel mechanism of dual analysis that they believed necessary to describe the phenomena.

If CAT is the appropriate model whenever lexical subcategorizations are played out in syntax then it should be no surprise that V(P)R shows CATlike behavior. Other constructions where CAT should be applicable are Noun Incorporation, Causative Constructions, Derivational Morphology, Preposition Stranding.

But *not* Wh-Movement. CAT is not Categorical Grammar espoused by Bach (1976), Moortgat (1988) and Steedman (1996) among others in that it lacks “type-lifting”, the feature of those systems which made it possible to embed descriptions of the broadest long-distance dependencies.

2. The Hungarian verbal system

Hungarian has a verbal system very much like the Germanic, and can be similarly modeled by CAT, but with one striking shortcoming. It has been traditional in the analysis of the Hungarian system to model the positioning of the Verbal Modifier (VM, to be explained below) along with the modeling of the rest of the verbal system. CAT cannot do this. CAT gives a simple and satisfying model of the verbal system minus the VM, capturing many of its very particular (but robust) properties. But when the CAT definitions needed to model the positioning of the VM are added to it, it overgenerates to the point that the model is useless, no longer predicting any of the interesting features.

CAT is so restrictive that its failure to model a system is by itself informative, and so no cause for lament. But in this case the message is sharper, as it suggests specifically that, despite tradition, the positioning of the VM is a business inde-

pendent of the verbal system, and at the end I will suggest reasons to think that this is so.

2.1 The verbal system without VMs

I will first quickly sketch the verbal system without the VM, and then with the VM, noting the main generalizations. These generalizations represent a hard-won understanding of the system developed over a decade or so, including at least Brody (2001), Horvath (1986), Kenesei (1994), Koopman and Szabolcsi (2000) (= K&Sz), and Szabolcsi (1996), among many others.

Hungarian has a small series of optional “modal” verbs which occur in a clause in fixed interpretive order, just the sort of system CAT likes:

- (41) *Nem fogok kezdeni akarni be menni.*
 not will-1SG begin-INF want-INF in go-INF
 ‘I will not begin to want to go in.’

Ignoring the VM (*be*), each of these elements has scope over all elements to the right. Furthermore, any reordering of adjacent elements results in ungrammaticality. From this, we may conclude that the following holds:

- (42) *nem* > *fogok* > *kezdeni* > *akarni* > main-verb

In its rigidity, and its rightward orientation, this system resembles for example the English auxiliary system, and in fact, K&Sz refer to the order in (41) as the “English Order”. I will adopt this term from them, and use it to refer to the “head-first” order, where each element takes as its complement the element (or phrase projected for the element) to the right.

In addition to the order displayed in (41), Hungarian has a different, in fact opposite, way to deploy the series in (42), as illustrated here:

- (43) a. *nem* [*fogok* > *kezdeni* > [[*be* < *menni*] < *akarni*]]
 b. *nem* [*fogok* > [[[*be* < *menni*] < *akarni*] < *kezdeni*]]]
 (K&Sz, Appendix)

Importantly, the interpretive order of the elements in (43) is the same as in (41); that is, *akarni* ‘want-INF’ always has scope over *menni* ‘go-INF’, for example, despite their being in opposite orders in (41) and (43); in other words, (43) represents different ways to realize the abstract structure in (42). The carats in (43) indicate the understood orders. The order of elements in (c) I will call the “Compound Order”, as the head-complement order is that found in compound terms in Hungarian as well as English. Brody calls it the “roll-up” order, for good reason, as we shall see. The tensed verb and its complement are always in the English order.

As the forms in (43) show, any given sentence with multiple auxiliaries will show a mixture of the English and Compound orders. But there are strong constraints on the mixture:

1. The tensed verb cannot occur in a Compound order:

- (44) a. *fogok* > *be* < *menni* < *akarni* < *kezdeni*
 b. **be* < *menni* < *akarni* < *kezdeni* < *fogok*
 (*fogok* is tensed)

2. Any compound structure must be at the bottom of the string of auxiliaries:

- (45) a. *nem* > *fogok* > *kezdeni* > *akarni* > *be* < *menni*
 b. *nem* > *fogok* > *akarni* > *be* < *menni* < *kezdeni*
 c. **nem* > *fogok* > [*akarni* < *kezdeni*] > *be* < *menni*

3. The English order cannot occur inside of a Compound order:

- (46) a. *fogok* > *be* < *menni* < *akarni* < *kezdeni*
 b. **fogok* > *be* < [*akarni* > *menni*] < *kezdeni*

These three findings can be summed up in the following recipe for creating alternative orders for a given string of auxiliary verbs conforming completely to the English order: beginning at the bottom, you may compound, or “roll up”, the bottom two terms, and may apply this rule repeatedly, but not at the very top, where the tensed verb and its complement must be in the English order.

This system is easily modeled in CAT. Since each auxiliary, apart from the tensed auxiliary, can appear on either side of its complement, each shows *order* ambiguity; that is, each has both the following subcategorizations:

- (47) _F, F_

This by itself is not enough, because, with Geach’s rule (3), it will generate all of the ungrammatical orders in (44), (45), and (46). (45c), for example, would count as grammatical, with exactly the parse indicted. In order to prevent this, we must impose further *level* constraints. There is some question what the relevant levels are; I will assume they are word vs. phrase (as the term *compound* in *compound order* suggests), and assuming that the compound order is essentially lexical, and the English order is essentially phrasal, we have:

- (48) aux: _Fⁿ, F⁰_

That is, each auxiliary takes a phrase of type F to the right, or a word of type F to the left. Furthermore, the tensed auxiliary is unambiguously $_F^n$.

Then, given Geach's rule, along with the assumption that words can head words, words can head phrases, but phrases cannot occur in words (see DiSciullo & Williams 1987), we predict part of the contours of the Hungarian system. The fact that the English order cannot occur in the middle of a compound follows from the fact that a phrase (the FP bracketed in the following cannot occur in a compound (marked with { } below):

- (49) **fogok* > {[*akarni* > [*be* < *menni*]]_{FP} < *kezdeni*}

The fact that compounds cannot occur in the middle of a sequence of auxiliaries does not follow from the specifications in (48); (50) is a parse of such a case consistent with (48):

- (50) **nem* > *fogok* > [*akarni* < *kezdeni*]_{Aux-VP} > [*be* < *menni*]_{VP}

In (50), *akarni* and *kezdeni* form a compound verb, where *akarni* has its VP taking, rather than V taking, subcategorization; that subcategorization is inherited by the compound, according to Geach's rule. Although some speakers accept forms very much like this, I will assume that they are ungrammatical, and will introduce the further specifications necessary to rule them out.

The problem would be solved if *akarni* were prevented from using its VP-taking subcategorization when it was in a compound. This can be achieved by reconstruing the ambiguity of the auxiliary verbs in a slightly different way from (48). Specifically, the principal ambiguity will be between *root* and *word* level forms for each of the auxiliaries, as in (51):

- (51) *akarni* *root*, $F_{root_}$
 word, $_F^n$

That is, *akarni* is still ambiguous, but between the two levels *root* and *word*; roots enter into the compounding system, and words into phrasal syntax. Now (50) cannot be produced – only the root *akarni* can appear on the left of a compound, and only a further root subcategorization can be inherited by the compound.

In order to allow for compound structures to appear in syntax, we must allow roots to be reconstrued as words; once done, they can be used in syntax, but cannot enter the compounding system again.

While the "coding" in (51) may appear suspicious, it is really harmless, when one considers that if CAT is the model, the *only* way languages can differ is by level, order and type restrictions, and these restrictions are enforced in a rigid local fashion by X-bar inheritance and Geach's rule. I suspect that the ambiguity in (51) occurs in English as well, with the particle-verb constructions – that is, the relation

between (a) and (b) below is really a level-order ambiguity between root and word level identification of the particle itself:

- (52) a. *John [looked up]_V the answer.*
 b. *John looked the answer up.*
 c. **John looked right up the answer.*
 d. *John looked the answer right up.*
 e. *the looking up of the answer*
 f. **the looking of the answer up*

The lexical version excludes modification, whereas the syntactic version does not (c). The lexical version nominalizes ((52e) – the lexical particle is “inside” the nominalization, and therefore immune to the laws governing the form of NPs), the syntactic version does not ((52f) – the syntactic particle is “outside” the nominalization, where it is excluded from NP on general grounds). I imagine this line of analysis could be applied to German separable prefixes as well.

Finally, to account for the absence of tensed verbs inside of compound structures, we require that T be a word-level element.

These stipulations exactly account for the Hungarian compounding paradigm, if the VM is excluded.

2.2 The verbal system with VMs

I think that the fact that RoC with X-bar inheritance can allow the behavior of the Hungarian verbal system, so complex at first glance, to be boiled down to (51) is an impressive result. The conclusion is challenged however by the behavior of the Verbal Modifiers (VMs), which cannot be fit into the system without losing all predictions.

The VM is a particle, or sometimes a short phrase, that bears a close association with the main verb, sometimes forming an idiomatic expression with it (Horvath 1984). The VM occurs either before or after the tensed verb, depending on features of the sentence in which it occur. If there is a negative, it occurs after the verb; if the negative is removed, and other conditions are correct, it occurs before the verb:

- (53) a. *nem fogok be menni*
 not will-1SG in go
 b. *be fogok menni*
 c. **nem be fogok menni*
 d. **be nem fogok menni*

be is a complement of *menni*; but in (b) it occurs to the left of the tensed auxiliary verb. And in fact, an unbounded number of auxiliary verbs can appear between

the position of the particle to the left of the tensed verb and the verb of which it is a complement:

- (54) *Be fogok kezdeni akarni menni.*
 in will-1SG begin-INF want-INF go-INF
 ‘I will begin to want to go in.’

The question is, what regulates the relation between these two positions.

The “trigger” for the appearance of *be* in the initial position has been argued to be phonological (e.g. Szendrői 2001) – the auxiliary verb needs “support”, if not from a negative or a focus, then from a particle. I will assume that the trigger is an extrinsic constraint that CAT is not obliged to model.

To generate (54), the CAT specifications must admit a third possibility – the English order must permit a sequence of *words* to realize the English order, as only words can transmit, via Geach’s rule, the lower verb’s need for the particle to the top of the verb chain:

- (55) a. Aux: $_F^{\text{word}}$
 b. *menni*: *be*_
 c. *Be* < [*fogok* > *kezdeni* > *akarni* > *menni*]

If each aux has a specification like the one in (a), and the verbs taking VMs have specifications like the one for *menni* in (b), then (54) will have a parse like (55c).

There is in fact some circumstantial evidence in favor of treating VMs in this way – the verbs which enter into compounding relations with one another are approximately the same verbs which permit VM rising – *utálni* ‘hate-INF’ for example does neither. But the lists are not identical (Szendrői, p.c.) so this consideration is hard to evaluate.

But there are two problems with analyzing the VMs in this way.

First, it is predicted that particle movement would be compatible with compounding, but it is not:

- (56) *Be* < [*fogok* > *kezdeni* > [*menni* < *akarni*]]

Particle raising is compatible only with the pure English order, so any compounding interferes. From the point of view of CAT this is very odd, as other phrasal complements are compatible with compounding, which shows that compounding is transparent to a main verb’s subcategorization; for example:

- (57) *Nem > fogom > akarni > [szétszedni < kezdeni] a rádiót.*
 not will-1SG want-INF apart-take-INF begin-INF the radio-ACC
 ‘I won’t want to begin to take apart the radio.’

Example (57) shows that compounding of the main verb (represented by the bracketed sequence) does not prevent the main verb's direct object subcategorization (*szétszedni*: _NP) from becoming the subcategorization of higher constituents. If for direct objects then why not for particles?

Secondly, particles seem to be able to rise out of embedded CP complements under certain circumstances; for example,

- (58) *Szét kell hogy szedjem a rádiót.*
 apart must that take-SUBJ-1SG the radio-ACC
 'I must take the radio apart.' (K&Sz, Appendix)

Although such cases are quite restricted, the fact that they exist at all suggests that CAT is not the right mechanism.

These two properties of VM positioning – opacity of the compound structures and the nonlocality – both point to movement in the classical sense, rather than CAT inheritance. Compounds are always opaque to syntactic movement, but CPs are not.

Although removing the VMs from the provenance of CAT into that of movement greatly simplifies both systems, one wonders how the Hungarian child learns this discrimination, a discrimination I am not entirely certain of myself at the moment.

Another reason to implicate movement in the positioning of the VM is made repeatedly in Koopman and Szabolcsi (2000): the VM can often be a full phrase. This again is characteristic of movement, especially movement that bridges CPs:

- (59) a. [*a szobába*]_{PP} *menni*
 the room-into go-INF
 'to go into the room' (K&Sz, 19)
 b. [*A szobában*]_{PP} *fogok akarni maradni.*
 the room-in will-1SG want-INF stay-INF
 'I will want to stay in the room.' (K&Sz, 22)

I think it is difficult at this point to assess the success of CAT in modeling the Hungarian system. One needs to understand better the relation between VM positioning and focusing, among other things. But my guess at the moment is that VM positioning and verbal clustering make use of different mechanisms (XP movement and CAT, respectively), and only appear to be a single coherent system when attention is restricted to simple cases.

2.3 Is roll-up really lexical?

In a recent monograph, Koopman and Szabolcsi (K&Sz) seek a theory of clusters which has only phrasal syntax and XP movement. They thus seek to avoid any reference to the ‘lexical/phrasal’ distinction on which the analysis just given rests. Their account thereby also distinguishes itself from any of the theories in which the roll-up structure is done by X^0 movement, and VM fronting by XP movement.

But on close inspection, the relevant distinction can be found in the K&Sz system, just relabeled in terms of ‘smallness’ instead of ‘lexicity’, where smallness, never defined, has less intuitive content than lexicity, though it would seem to be extensionally equivalent to it, judging from the examples of it that are given. But ‘smallness’ leads to grave problems that ‘lexicity’ does not have.

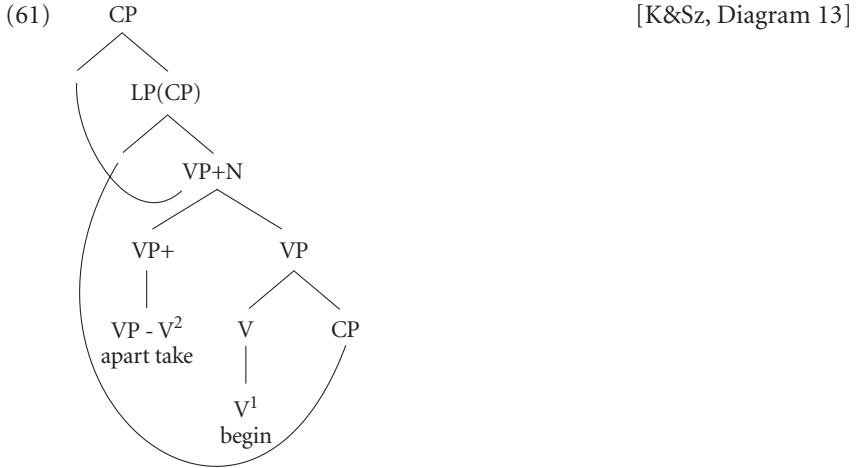
The K&Sz analysis is embedded in a checking theory of syntax with only XP movement, and only overt movement. The derivations consequently make heavy use of remnant movement, as moved phrases and the remnants they have created leap-frog each other up largish trees in longish twining paths. I will not review the entire theory here, as it is nicely presented in the monograph, but will concentrate here on how the ‘lexicity’ distinction is instantiated in the theory under the name of ‘smallness’.

First, how are the roll-up structures generated? The Auxiliary verb is dominated by VP and “VP+” nodes, and the VP+ specifier is where the complement of the auxiliary is licensed – the complement VP+ moves to the specifier of the embedding V’s VP+:

$$(60) \quad [_{VP+} [_{VP} V_1 [_{VP+} [_{VP} V_2 [_{VP+} [_{VP} V_3 VM]]]]]]]$$

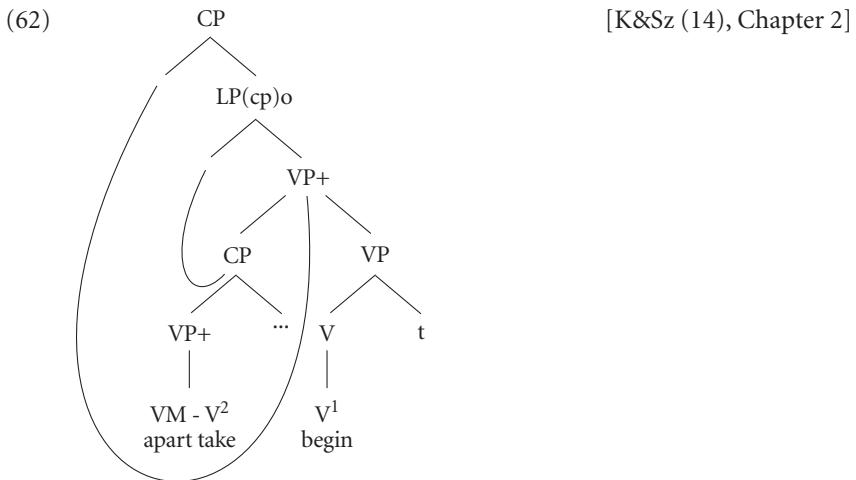
A succession of such movements, as indicated in (60), will result in the VM- V_3 - V_2 - V_1 roll-up order. Any complements of V_3 (like a direct object, for example), are evacuated from V_3P by movements not at issue here.

The derivation in (60) generates the roll-up order with only phrasal movement, but several questions must be answered. The most pressing is why the roll-up structure looks so ‘lexical’ in the first place. For example, why is the roll-up structure not available when the VM is phrasal? A second question is, how is the English order possible?



K&Sz answer these questions together, in how a particular stipulation about pied-piping interacts with movement constraints. First of all, the real structure is more complex than (61), in that every embedding is a full CP embedding. The diagram shows how the roll-up structure is developed. After the formation of the VP+ cluster is formed, it is moved to the spec of the dominating CP. As K&Sz remark, “Once the remnant VP+1 reaches [Spec CP], nothing can break VM-V2-V1: the inverted order is cemented.” (2000: 35).

In (61), the extraction of VP+ from the most embedded CP has already taken place. Suppose instead, however, that VP+ pied-pipes the lower CP; then we arrive at the following different structure and derivation:



The result of the pair of movements is that *begin* comes to precede its complement (again) and the English order results; as K&Sz say, “The pied-piping of CP makes a dramatic difference, because CP must extract to its own licensing position, LP(cp). The subsequent step, the movement of VP+₁ to SpecCP₁ shown in (62), now moves a remnant that dominates nothing but V1.” (2000:xx).

Thus K&Sz can derive both the roll-up and English orders entirely with XP movement. But how do they instantiate the clear differences between them, the differences that motivated the lexical/phrasal distinction in the analysis presented earlier, and in other analyses as well? Clearly, it must come about by controlling the pied-piping option, as that is what gives rise to the different derivations in the first place.

The principle which controls the pied piping option is the following:

- (63) When the specifier of VP+ is a small VM or an inverted sequence, VP+ optionally extracts from CP. Otherwise, VP+ cannot extract from CP.¹

There are two problems with this formulation. First, there is the fact already noted, that ‘small’ is never defined. One could in fact substitute ‘lexical’, if by ‘lexical’ one meant, not that the extraction target is an X⁰ (since it is a VP+) but rather that all of its phonetic content is dominated by an X⁰. This is a terminological point, but I think the avoidance of the term ‘lexical’ points to the efforts by the authors to distance themselves from the ‘lexical/syntactic’ distinction, and so not be seen as simulating X0 manipulations with pure XP tools.

But the worse problem with (63) is with the phrase ‘or an inverted sequence’, the most unhappy phrase in the whole treatment. The reason such a phrase is required is because, once you have started roll-up, you can continue, and the rolled-up sequence gets bigger and bigger. In a theory in which roll-up is lexical, it is no surprise that roll-up is cumulative: a lexical rule like the roll-up rule takes two stems and yields a compound stem; a more complicated lexical item, but still a lexical item, one that can submit to further application of the same rule, just what is found with nominal compounding. But not so in the K&Sz proposal. The result of one application of movement without VP+ piedpiping is a complex structure, a compound VP+ with now two lexical items in it. The resulting structure is certainly not ‘lexical’, even in the special sense introduced in the previous paragraph, as the two lexical items are separated by large amounts of empty syntactic space; nor is it ‘small’ in any sense at all – it can in principle grow to have as many words in it as you like. Thus to explain why roll-up is cumulative, K&Sz are forced to disjoin the description ‘an inverted sequence’ with ‘a small VM’. Surely this should show that the wrong tack is being taken. How is ‘an inverted sequence’ like something ‘small’? ‘Inverted sequences’ are no smaller than uninverted sequences. And how are ‘inverted sequences’ to be identified? It is instructive to unpack this term

explicitly – I think the simplest formulation is something like, ‘a cluster of verbs in whose derivation the non-piedpiping option in (63) has been taken every time’. But why should such a beast have any special standing, especially in the specification of (63) itself? Nothing could be more puzzling.

In fact further stipulations are required to mimic the lexical/syntactic distinction. One of the consequences of the theory displayed earlier is that it predicted that ‘roll-up’ could not start in the middle of a string of verbs:

- (64) **Nem fogok akarni_i kezdeni t_i be menni.*
 not will-1SG want-INF begin-INF in go-INF

But all derivations (both English and inverted) involve movement to the specifier of VP+. So, the following must be available as a stage in the derivation of the English order,

- (65) a. *kezdeni* [[*akarni*]_{VP+} *be menni*]_{CP}
 b. derivation of English order from (a), with CP pied-piping:
 → [[*akarni*]_{VP+} *be menni*]_{CP} *kezdeni* *t*
 → *kezdeni* [[*akarni*]_{VP+} *be menni*]_{CP}

But then, something must block taking the NONpiedpiping option in (a), and moving *akarni* directly to the spec of VP+ headed by *kezdeni*:

- (66) *[[*akarni*]_{VP+} *kezdeni* [*be menni*]_{CP}

K&Sz put forward two stipulations which jointly yield this result. First, it is not VP+ which is fronted to the spec of infinitival CPs, rather it is a containing category (PredP). This has the effect of blocking movement of the VP+, since only direct whole specifiers can be extracted, not parts of specifiers; this thus forces pied-piping of the PredP. But why should this make a difference? – after all, the PredP has exactly the same visible content as the VP+ that it now dominates. Because of the second stipulation that K&Sz make:

- (67) Hungarian Complexity Filter
 VP+ may pied pipe any XP to the auxiliary in the next clause, but XP must move on if it is more complex than VP+.²

This now blocks (66), as (66) now has the representation below:

- (68) [[*akarni*]_{VP+}]_{Pred} *kezdeni* [*be menni*]_{CP}

Now, PredP appears in the spec of VP+ and so violates the complexity filter.

How are inverted orders derived in the light of (67)? In the same way as before, but with extraction of VP+ from PredP in the lower clause, but this can only happen if *be-menni* has inverted with *akarni* in that clause.

So, with the two further stipulations, parity with the lexical roll-up theory is maintained. The two principles reviewed here, the principle governing pied-piping of big VMs and the complexity filter just reviewed, are completely independent principles of Hungarian; and yet they mysteriously conspire to give Hungarian the appearance of having a lexical compound-verb construction. Is this a coincidence? Could Hungarian, or any language, have had one of these principles operative but not the other?

The discussion of the CAT treatment of the Hungarian system emphasized that the positioning of the VM was necessarily outside the range of CAT; and our suspicion was that it was governed by a different system, the XP movement system, which CAT cannot model – it shows long-distance dependencies over material that is not affected by the dependency, and this is precisely what CAT cannot handle.

K&Sz seek a unified treatment of the whole system, verb clustering and VM placement together, for both roll-up and English orders. But is this really possible – is it possible to position the VM, which can move unboundedly through a set of auxiliaries, by the same kind of local checking that accounts for the roll-up structures?

- (69) *Be fogok kezdeni akarni menni* t_{Be} .
 in will-1SG begin-INF want-INF go-INF
 'I will begin to want to go in.'

But if the K&Sz system is examined closely, it is evidently not feasible, even in their own terms. The crucial fact to explain about VMs is that they cannot be removed from roll-up structures, and so all intervening auxiliaries must be in the English order:

- (70) **Be fogok kezdeni* [$t_{Be} < menni < akarni$] rolled-up structure

In the CAT theory, as in other theories that make the lexical/syntactic distinction, this is because the rolled-up lexical item is opaque to syntactic movement. In order to achieve the same result in the K&Sz system, where everything is an XP, basically the pied-piping options must be controlled, since this is really the only way that derivations can differ. But the way they are controlled in treating (70) is dramatically different from the way they are controlled in treating the cases discussed up to this point. I of course think that the dramatic difference is inherent in the phenomenon and cannot be eliminated, which is why I declared in the beginning that VM positioning must be a separate system, instantiated as something like XP movement in the narrow old-fashioned sense, laid on top of clustering.

To account for cases like (70), K&Sz posit a functional element NeutP, projecting NeutP, which is satisfied by the VM and contributes to the determination of the 'neutral focus' status of sentences in which the VM is moved to the front

of the top auxiliary. The problem though is how to coordinate the appearance of NeutP at the top with the correct piedpiping behavior over a chain of unboundedly many auxiliaries which may intervene in principle between Neut and the VM at the bottom.

The first thing that must happen is that the VM must be freed from the verb of which it is a complement. The VM must first visit the Spec of the VP+ of the verb of which it is a complement, but then that verb (as a VP) must break away from its own VP+ so that the VM can move independently:

$$(71) \quad \underbrace{[_{VP+} \text{ VM } [_{V_{t_{VM}}}]_{VP}]}_{\leftarrow}$$

The VM will then be free to move as a VP+. K&Sz call this possibility “VP splitting”, and it leads to VM fronting, as opposed to roll-up.

The crux of the problem though is that in a neutral sentence, this must happen for every auxiliary verb that intervenes between the VM and the top:

$$(72) \quad \textit{Be fogok kezdeni akarni menni t_{Be}} \\ \text{in will-1SG begin-INF want-INF go-INF}$$

At every step, the VP splitting option must be chosen, so as to not start a disastrous local roll-up along the path.

In fact, keeping VP+ intact does not lead to ungrammaticality; rather, it leads to partial roll-up, and then to focusing of the partially rolled-up part:

$$(73) \quad [\textit{Be menni}] \textit{ fogok kezdeni akarni t} \\ \text{not neutral, but rather with } \textit{Be menni} \text{ focussed} \quad (\text{K\&Sz (20), 88})$$

In order to effect the result, K&Sz propose a third principle of Hungarian:

$$(74) \quad \text{The VP Condition in Neutral Clauses:} \\ \text{Within the domain of NeutP, VP splits out of VP+} \quad (\text{K\&Sz 89})$$

The domain of NeutP is everything in NeutP, all the way down. This condition is meant to regiment every auxiliary in a chain of auxiliaries – it thus has global force. What this means is that local checking theory is basically set aside for the solution to this problem, in that a nonlocal condition is determining local choices directly.

I think that the conclusion that K&Sz come to here is correct in this respect – the placement of the VP cannot be determined by the same local checking theory that governs the verbal clusters, and nonlocal device, such as (74), must govern the behavior of the construction. But I think that the view that K&Sz would take is that (74) is a legitimate part of local checking theory. My own view is that devices like (74) or their equivalent may well be necessary, but it does no good to pretend that they are of a piece with other devices with a purely local character.

Moreover, even (74) is incorrect as it stands, in one important respect. It suggests that even non-auxiliary verbs beneath a NeutP will be governed by the NeutP, whereas in fact, the “influence” of NeutP via (74) holds only a single string of contiguous auxiliaries. K&Sz are thus compelled to define domain of NeutP in the following way:

- (75) “The domain of NeutP is its c-command domain, *minus the clauses below the first nonauxiliary infinitival complement taker*”
(K&Sz 89, *my italics*)

From the point of view of K&Sz’s structures, it is completely mysterious why the italicized clause needs to be added – both auxiliary and nonauxiliary verbs are full CPs after all, so there is no obvious notion of locality that is served by such an addition. Auxiliary verbs must be separated in any case out as needing to attract something to their VP+s – this is what gives rise to roll-up and other effects, but there is no reason why they should also have a special status in the definition of the domain of NeutP – the K&Sz theory simply fails to relate these two facts. But clearly they are related. Both are ultimately reflections, quite arbitrary reflections, in my opinion, of the lexical character of roll-up.

In sum, I feel that by forfeiting from the beginning, and completely deliberately, the phrasal/lexical (or XP/head) distinction, K&Sz put themselves in a box they cannot get out of with simple maneuvers, because the lexical nature of roll-up structures is so robustly present. First, ‘smallness’ governs pied piping; but then, smallness must be conferred to rolled-up structures, which are not small at all. Second, ‘roll-up from the middle’ must be blocked with a ‘complexity filter’, a device which uses local checking theory to code a global feature of the construction. Finally, locality is abandoned altogether, as a global condition on VP splitting (with jerrymandered definition of ‘domain of NeutP’) is required to guarantee that rolling-up won’t inadvertently derail VM placement. All this to avoid X^0 .

To see how arbitrary the K&Sz provisions for Hungarian are, consider how the language would look if we simply changed one of them, and kept the others the same. For example, suppose the Hungarian complexity filter forced the movement of XPs smaller than InflP, rather than larger than InflP. The language that results from such an adjustment would have a bizarre collection of properties from the point of view of the accounts which make the X^0 /XP distinction. But isn’t that a point in favor of such theories?

Notes

1. The principle as stated in Koopman and Szabolcsi (2000: 58, example (66)) actually reads as follows:

When the specifier of VP+ is a small VM or an inverted sequence, InfP+ optionally extracts from PredP.

Otherwise, InfP+ cannot extract from PredP.

The changes in the node labels referred to (InfP+ instead of VP+, PredP instead of CP) are due to a more developed idea of clausal structure in K&Sz Chapter 4, whereas the discussion of the diagrams in (61) and (62) are in the context of an earlier simpler version of the theory in K&Sz Chapter 3. The differences between the Chapter 3 and Chapter 4 versions are not relevant to the points I will make here, so I have reformulated the Chapter 4 principle to apply in the simpler context of Chapter 3.

2. As before, I have simplified; the actual principle in K&Sz (2000:61) is stated in terms of Infl+ (which dominates VP+) but this further structure is not relevant to the point at hand.

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PART II

Forces and factors

A stress-based approach to climbing*

Kriszta Szendrői

1. Introduction

Hungarian infinitival complement taking verbs fall into three classes (Kálmán et al. 1989). The first class exhibits climbing in neutral sentences (i.e. sentences that involve no contrastive focus or sentential negation) and (optional) inversion in non-neutral ones. Verbs that belong to this group are *akar* ‘want’, *fog* ‘will’, *tud* ‘can’ etc. The second class does not participate in inversion and does not allow climbing (cf. *elfelejt* ‘forget’, *elkezd* ‘begin’, *imád* ‘adore’, *utál* ‘hate’ etc.). Verbs of the third class allow inversion, but do not trigger climbing (cf. *látszik* ‘seem’, *tanul* ‘learn’). In this paper I shall concentrate on the verbs that belong to the first class.

One property that distinguishes these verbs from the other verbs that take infinitival complements is that these verbs do not take neutral, main sentential stress (cf. Kálmán et al. 1989). Therefore, I will call these verbs stress avoiding verbs. In this paper, I argue that it is this property that is responsible for the occurrence of climbing. (See É. Kiss 1998; Dalmi 1999 for a similar view.)

Climbing can be illustrated by the following example. In a neutral Hungarian sentence whose tensed predicate is a stress avoiding verb, the verbal modifier (VM) of the most embedded verb appears in front of the stress avoiding verb.

- (1) *Át_i fogja tudni úszni a Dunát*
Across will can-INF swim-INF the Danube-ACC
'(S)he will be able to swim across the Danube.'

Hungarian is standardly assumed to be a VO language, so most analyses assume that in (1) the VM has moved to the sentence-initial position.¹ The status of the movement and the origin of the VM are widely debated. Bródy (1997), Koopman and Szabolcsi (2000) take the movement to be an instance of phrasal movement. Bródy's (1997) main argument in favor of such an approach is the non-local nature of the movement. É. Kiss (1998) and Dalmi (1999) argue that the particle is a head, hence it undergoes head-movement. In this paper I defend the position that

particle climbing is an instance of syntactic phrasal movement to the specifier of the finite stress-avoiding verb (SAV). This is illustrated in (2).

- (2) [_{SAVP} *Át*_i [_{SAV} *fogja*] *tudni* [_{VP} *t*_i *úszni* *a Dunát*]]
 Across will can-INF swim-INF the Danube-ACC
 ‘(S)he will be able to swim across the Danube.’

As for the origin of the moved VM, I take the VM, whether it is a head or a phrase, and the V to form a complex predicate in syntax (cf. Komlósy & Ackerman 1983; Neeleman 1994a; Ackema & Neeleman 2000; Ackema this volume, É. Kiss this volume). Thus, I take the VM to be adjoined to the verbal head.² Note that phonologically speaking the VM-V complex is one phonological word, with one stress falling on the VM, as in Hungarian stress at the word level is on the left.

The VM is stranded if the verb undergoes V-movement. This is illustrated in (3a) for a sentence that involves a contrastively focused constituent (Bródy 1990, 1995), and in (3b) for an imperative sentence (Szendrői 1998).

- (3) a. *PÉTER várta meg Marit a mozi előtt.*
 PETER waited VM Mari-ACC the cinema in.front.of
 ‘It was PETER who waited for Mary in front of the cinema.’
 b. *Fogd meg ezt a kötelet!*
 hold-IMP/SUBJ VM this the rope-ACC
 ‘Hold this rope.’

Following Bródy (1990, 1995), I assume that in a Hungarian sentence with a contrastively focused constituent the constituent moves to the specifier of a functional head which projects above the VP. The V moves to the head of the projection: obligatorily in tensed clauses, optionally in infinitivals. I do not assume the existence of a syntactic [+Focus]-feature (see Szendrői 2001 for more discussion of this point). Instead, I argue that focus movement in Hungarian is stress-driven. The focused constituent targets the position where main stress is assigned in Hungarian: the left edge of the clause.

In this paper, I show that the same mechanism ensures that a stress avoiding verb does not receive main stress. In particular, I argue that the trigger for particle climbing is stress avoidance: the particle moves to the left-peripheral position to pick up main stress. It follows from the above that climbing should be blocked by the presence of a focused constituent, which is indeed the case.

The paper is structured as follows. In Section 2 I sketch the Hungarian nuclear stress rule. In Section 3 I argue that Hungarian exhibits movement triggered by stress in focus constructions. In Section 4 I show that climbing can be understood as an instance of last resort movement in order to avoid main stress falling on the stress avoiding verb. In Section 5 I argue for the following two claims. First, that climbing happens in the syntax, rather than on the PF branch, and second, that it is

phrasal movement. Section 6 draws a tentative parallel between particle climbing in Hungarian and the distribution of the Basque expletive particle *ba*. Section 7 concludes the paper.

2. Stress in Hungarian

Following Nespor and Vogel (1986), Selkirk (1986) and many others, I argue that stress is assigned to an independent prosodic representation, rather than directly to the syntactic representation. The prosodic representation is made up of prosodic words (ω) that form phonological phrases (φ) that, in turn, form intonational phrases (IntP). The syntax-phonology mapping ensures that the syntactic and prosodic representations match. Following the spirit, but not the detail of Nespor and Vogel (1986), I assume that the phonology-syntax mapping in Hungarian is as follows³ (cf. also Selkirk 1986; Inkelas 1989; McCarthy & Prince 1993; Neeleman & Weerman 1999).

(4) SYNTAX-PHONOLOGY MAPPING OF PHRASES (HUNGARIAN)

Align the left edge of a phonological phrase with the left edge of a syntactic phrase.

(5) SYNTAX-PHONOLOGY MAPPING OF CLAUSES (HUNGARIAN)

Align the left edge of the intonational phrase with the left edge of the clause.

‘Clause’ in (5) is understood as the largest extended projection of the V whose head is lexically filled. In what follows, I assume that in a neutral sentence, where there is no evidence for verb-movement, the verb remains in situ, and the clause corresponds to a VP. If the V moves to a functional head position, then it is this projection that is relevant for the syntax-phonology mapping.

Nuclear stress is assigned as follows.⁴

(6) NUCLEAR STRESS RULE (NSR) (HUNGARIAN)

Main stress falls on the leftmost phonological word (ω) in the leftmost phonological phrase (φ) of the intonational phrase (IntP).

In a neutral sentence, where no contrastive focus is present, the verb stays in situ, and the clause consists of a VP. If material is adjoined to the VP, then both segments of the VP are mapped onto a segmented intonational phrase. As I show in Szendrői (2001), the nuclear stress rule operates on the innermost intonational phrase segment. Thus, VP-adjoined material, like topics, fall outside its scope. Alternatively, one may analyse topics to sit in the specifier of some appropriate, higher functional head. Given that the V does not move to this head overtly, the mapping principle

in (5) will ensure that the specifier of this head falls outside the core intonational phrase. Thus, in a neutral Hungarian sentence, such as the one in (7), main stress falls on the verb, as the verb is the leftmost non-adjoined constituent in the VP.⁵

- (7) [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ }]]]
 [VP A *nő* [VP a *kalapját* [VP [V "le vette.]]]]
 the woman her hat-ACC off took
 'The woman took her hat off.'

In a sentence with an embedded clause, as in (8), two distinct leftward VP boundaries are present, one projected by the matrix verb and another one projected by the embedded verb.⁶ As a result, two intonational phrases are formed. The stress rules operate on both intonational phrases, yielding main stress on both the matrix and the embedded V.

- (8)
 [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ }] [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ } { $\varphi\omega$ }]]
 [VP *Péter* [VP "mondta, [CP *hogy* [VP *Marit* [VP "meg látogatta az *anyja*]]]]]
 Peter said that Mary-ACC VM visited the mother-3SG
 Peter said that Mary was visited by her mother'.

In the case of a series of infinitival complements involving stress avoiding verbs it seems to be possible to assign a single intonational phrase to the whole sentence with only one main stress for the whole sentence. This behavior suggests that the stress avoiding verbs behave as if they were part of the extended projection of the lowest infinitival verb (cf. van Riemsdijk 1998:Note 12; Wurmbrand 2001 for a similar claim). In Grimshaw's (1991) sense, the heads of an extended projection all share certain features. Indeed all heads in an infinitival complex (including the highest finite verb) are [+V]. However, the stress avoiding verbs are not fully functional heads as they have their own (c- and) s-selectional properties and they can be (c- and) s-selected for. Thus, in this sense they are lexical heads. This explains why the topmost verb, the finite verb, marks the left edge of the clause for the syntax-phonology mapping principle in (5). Functional heads are invisible for the syntax-phonology mapping (Zubizarreta 1998), but lexical heads are not. Nevertheless, it is only the projection of the highest verb, the finite one, that is matched by a left edge of an intonational phrase, as the lower infinitival heads, though lexical, they are not in the highest position of their extended projection, so they do not meet the structural description of the mapping principle in (5).

Thus only the leftward XP-boundary projected by the topmost or finite verb is relevant for the syntax-prosody mapping in (5) and one single intonational phrase wraps the whole complex sentence. (9) illustrates the way the syntax-phonology mapping and the stress-rule operates in a sentence with a series of stress avoiding

infinitival complements and particle climbing.⁷ Recall from (2) that in climbing, the particle targets the specifier of the highest, finite stress avoiding verb.

- (9) [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ ω } { $\varphi\omega$ } { $\varphi\omega$ } { $\varphi\omega$ }]]
 [SAVP *Én* [SAVP *”haza_i fogok kezdeni akarni* [VP t_i (')*menni*]]]
 I home will-1SG begin-INF want-INF go-INF
 'I will begin to want to go home.'

3. Stress-driven focus movement

I follow Reinhart (1995:62) and Neeleman and Reinhart (1998) in assuming that 'the focus of a clause is a(ny) constituent containing the main stress of the clause, as determined by the stress rule'. In Szendrői (1999, 2001) I argued that so-called focus movement in Hungarian (cf. Bródy 1990, 1995) is in fact movement of a constituent to the main stress position accompanied by verb-movement.

- (10) STRESS-DRIVEN MOVEMENT:

In Hungarian, movement of the focused constituent to the left periphery is triggered by the requirement that a focused constituent be stressed.

(Szendrői 1999:552)

(11) shows that in the so-called Hungarian focus construction the main stress falls on the focused constituent according to the nuclear stress rule in (6).

- (11) [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ ω } { $\varphi\omega$ }]]
 [FP *A nő* [FP *A ”KALAPJÁT vette* [VP [_V *le t_V*] t_{DP}*]] (*nem a sálját.*)
 the woman the hat-3SG-ACC took off
 'It was her hat that the woman took off (not her scarf).'

This stress-driven approach to focus-movement makes a number of predictions. For example, it predicts that only *one* focused constituent may move to the left periphery to take up main stress, the second focus and any subsequent foci get stress by an extra, marked stress rule. This is a straightforward consequence of the fact that there is a single main stress assigned by the nuclear stress rule in (6) in every clause. The prediction is borne out as it is illustrated by the following example. The VM, which marks the original position of the verb – at the left edge of the VP –, precedes the second focus indicating that the second focus is in situ.

- (12) *Csak ”HÁRMAN ettek meg csak ”KÉT KENYERET.*
 Only three ate VM only two bread-ACC
 'It was only three people who ate up only two slices of bread.'

A further prediction of this approach is that verb-focusing will involve *no* movement, as the verb is in the neutrally stressed position even in its base-position. This is true, as it is shown in (13), as the VM-V order is not disturbed. Since V-movement in Hungarian generally strands the verbal particle in the base-position (cf. (3a) and (3b)), the VM-V order suggests that the verb is in situ.

- (13) *De* [_{VP} *én* [_{VP} *”ODA VITTEM a levelet*]].
 But I VM took-1SG the letter-ACC
 ‘But I DID take the letter there.’ or
 ‘But I TOOK the letter THERE (not brought it here).’

Given that there are two intonational phrases in a complex sentence, it is not surprising that contrastively focused constituents may appear in both clauses:

- (14) *”PÉTERT kértem meg, hogy A ”KÓRHÁZBA vidd el,*
Peter-ACC asked-1SG VM that the hospital-into take-IMP VM
(és nem a gyereket az oviba).
 and not the child-ACC the nursery-into
 ‘I asked you to take PETER to the HOSPITAL, and not to take the child to the nursery.’

To sum up, there are a number of predictions in a stress-based approach to focus that are borne out.

4. Particle climbing in a stress-based approach

As a further consequence of this approach, the structural position that is filled by the contrastively focused constituent can be created to *avoid* stressing of a constituent that would otherwise be clause-initial. I would like to show that particle climbing is a last resort operation that applies to avoid stress falling on a stress avoiding verb.

Recall from Section 2 that in a sentence involving stress avoiding verbs a single intonational phrase is assigned to the whole sentence, as the stress-avoiding verbs, though lexical, are part of a single extended projection. Thus only the leftward XP-boundary projected by the topmost or finite verb is relevant for the syntax-prosody mapping in (4)–(5) and one single intonational phrase wraps the whole complex sentence. As a result, the finite stress-avoiding verb ends up as the leftmost prosodic word of the leftmost phonological phrase of the intonational phrase, thus it receives main stress by the nuclear stress rule in (6). Since stress-avoiding verbs cannot bear main stress, the sentence is ungrammatical. This is shown in (15).

- (15) [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ } { $\varphi\omega$ } { $\varphi\omega$ } { $\varphi\omega$ }]]
 *_[SAVP] *Én* _[SAVP] "fogok kezdeni akarni haza menni"]
 I will-1SG begin-INF want-INF home.go-INF
 'I will begin to want to go home.'

In order to save (15), a last resort operation takes place that moves the particle of the lowest verb (16a), or the lowest verb itself if it has no particle (16b), to the sentence initial position. The moved element takes up the main stress of the utterance.

- (16) a. [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ ω } { $\varphi\omega$ } { $\varphi\omega$ } { $\varphi\omega$ }]]
 [_{SAVP} *Én* [_{SAVP} "haza_i fogok kezdeni akarni t_i menni]]
 I home will-1SG begin-INF want-INF go-INF
 'I will begin to want to go home.'
- b. [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ ω } { $\varphi\omega$ } { $\varphi\omega$ }]]
 [_{SAVP} *Én* [_{SAVP} "úszni_j fogok kezdeni akarni t_j]]
 I swim-INF will-1SG begin-INF want-INF
 'I will want to begin to swim.'

As (17) shows, a finite stress-avoiding verb may be saved from being sentence-initial by the presence of a contrastively focused element as well. Recall from Section 3 that focus movement is stress-driven in the sense that it targets the main stress position. If so, it is not surprising that focusing saves the structure in (15). The focused element moves to the initial position, takes up main stress, and thus allows the stress avoiding verb to surface unstressed.

- (17) [IntP { $\varphi\omega$ } [IntP { $\varphi\omega$ ω } { $\varphi\omega$ } { $\varphi\omega$ } { $\varphi\omega$ }]]
 [_{SAVP} *Én* [_{SAVP} "MOST fogok kezdeni akarni haza menni]]
 I NOW will-1SG begin-INF want-INF home go-INF
 'It is NOW that I will want to begin to go home.'

Koopman and Szabolcsi (2000) observed that it is not only the case that particle climbing can be omitted if a constituent is contrastively focused, rather it is in fact *blocked* in this case, see (18a). Interestingly, an intervening quantifier or topic does not block climbing, (18b).

- (18) a. (*Át) A "DUNÁT (*át) fogom akarni kezdeni
 across the Danube-ACC across will-1SG want-INF begin-INF
 *(át) úszni.
 across swim-INF
 'It is the Danube that I will want to begin to swim across.'

- b. "Át fogom a Dunát akarni kezdeni úszni.
 across will-1SG the Danube-ACC want-INF begin-INF swim-INF
 'As for the Danube, I will want to begin to swim across it.'

The present approach to climbing and focusing allows a straightforward analysis of the complementary distribution of focused elements and climbed particles. The blocking effect is due to the fact that once focusing happened there is *no trigger* for climbing. Recall that focus-movement is triggered by the interpretative requirement that the DP gets stressed (10), and that climbing happens to ensure that the stress avoiding verb does not get stressed. Clearly, focus-movement alone satisfies both its own need to get stressed and the verb's need not to get stressed. Thus, in sentences with a focused constituent, climbing is ruled out by economy in the sense of Reinhart (1995): an unnecessary operation is blocked.⁸

Koopman and Szabolcsi (2000: 84–85) account for the observed blocking effect as follows. They claim that in their [_{PredP} [_{WP} VM [_{VP} V t_{VM}]]] sequence the VP moves to [_{Spec}, PredP] in a neutral clause, thus arriving at a separation of the VM and the V. In non-neutral clauses, however, the WP, containing the VM plus the V, moves to [_{Spec}, PredP], thus keeping the VM-V order unchanged. It is easy to see that separation of the VM and the V is necessary for climbing, so it will be ruled out exactly in non-neutral clauses. They assume that the 'motivation may be ultimately phonological (intonational); the effects are directly syntactic' (Koopman & Szabolcsi 2000: 85). My analysis is in line with this claim in that I assume that climbing is indeed phonologically conditioned syntactic movement.

The stress-driven approach to climbing presented above extends to complex sentences as well. Recall from Section 2 that an embedded clause forms a separate intonational phrase from the main clause as in (8), repeated here for convenience.

- (8)
- | | | | | | | |
|-------------------------------------|-------------------------------------|----------------------|-------------------------------------|-------------------------------------|-------------------|----------------|
| [_{IntP} { _φ ω} | [_{IntP} { _φ ω} |]] | [_{IntP} { _φ ω} | [_{IntP} { _φ ω} | { _φ ω} |]] |
| [_{VP} Péter | [_{VP} "mondta, | [_{CP} hogy | [_{VP} Marit | [_{VP} "meg látogatta az | anyja]]]] | |
| Peter | said | that | Mary-ACC | VM | visited | the mother-3SG |
- Peter said that Mary was visited by her mother'.

This prosodic structure gives the prediction that an embedded verbal cluster will exhibit climbing if the finite verb in the complement clause is a stress avoiding verb. As (19) shows, the prediction is borne out if the embedded clause is declarative.⁹

- (19) a. [_{IntP} {_φω}
 [_{IntP} {_φω} |]] | [_{IntP} {_φω | ω} | {_φω} |]] |
- | | | | | | | |
|-----------------------|--------------------|----------|----------------------|---------------------------------|---|----------|
| [_{VP} Péter | [_{VP} el | mesélte, | [_{CP} hogy | [_{SAVP} "haza kezdett | [_{VP} t _{VM} úszni]]]] | |
| Peter | VM | told | that | home | started | swim-INF |

- b. [_{IntP} { $\varphi\omega$ } [_{IntP} { $\varphi\omega$ }]] [_{IntP} { $\varphi\omega$ } { $\varphi\omega$ }]]
 * [_{VP} Péter [_{VP} el mesélte, [_{CP} hogy [_{SAVP} ”kezdet” [_{VP} haza úszni]]]]]
 Peter VM told that started home swim-INF
 ‘Peter told (us) that he started swimming home.’

However, in the case of non-declarative clauses, climbing seems to be optional in some cases, as in (21), even though it is obligatory in other cases, such as (20).

- (20) a. ”Kizárt, hogy ”részt akarjunk venni a
 excluded that part-ACC want-SUBJ/IMP-1PL take-INF the
projektumban.
 project-in
 b. *”Kizárt, hogy ”akarjunk részt venni a
 excluded that want-SUBJ/IMP-1PL part-ACC take-INF the
projektumban.
 project-in
 ‘It is out of the question that we want to take part in the project.’
- (21) a. ”Elvárja, hogy ”részt akarjunk venni a
 Expect-3SG that part-ACC want-SUBJ/IMP-1PL take-INF the
projektumban.
 project-in
 b. ?”Elvárja, hogy ”akarjunk részt venni a
 Expect-3SG that want-SUBJ/IMP-1PL part-ACC take-INF the
projektumban.
 project-in
 ‘He expects us to want to take part in the project.’

Moreover, in certain other cases, climbing is impossible. As (22) shows, the optionally stress avoiding verb *próbál* ‘try’ does not trigger climbing under the matrix predicate *megparancsol* ‘order’.

- (22) a. *”Megparancsolta, hogy be ”próbáljak jutni a
 VM-ordered-3SG that in try-SUBJ/IMP-1SG get-INF the
házba.
 house-into
 b. ”Megparancsolta, hogy ”próbáljak bejutni a
 VM-ordered-3SG that try-SUBJ/IMP-1SG in-get-INF the
házba.
 house-into
 ‘He ordered that I try to get into the house.’

At first sight, the optionality or the impossibility of climbing seems to be in violation of the stress avoiding property of the lower finite V. However, this is only apparent. In Szendrői (1998) I argued that certain matrix predicates may lexically select for subjunctive or imperative embedded complement clauses. Some matrix predicates allow both type of complement clauses. Morphologically, the imperative and subjunctive forms of the verb are the same, as also indicated by the glosses in (20) to (22). But syntactically, the two are different, since the verb is fronted, leaving the VM stranded, in imperative clauses, whereas in subjunctive clauses it stays in situ.

Let us determine the selectional properties of the verbs involved in (20) to (22). As it is shown in (23), the adjective *kizárt* ‘out of the question’ only allows a subjunctive subject clause. In (24) we can see that the V *elvárja* ‘expect’ allows both a subjunctive and an imperative complement. Finally, (25) shows that *megparancsol* ‘order’ selects an imperative rather than a subjunctive complement. This is in accordance with the obligatory lack of climbing in (22), and the optional climbing in (21). I argue that the observed lack of climbing is due to the independently motivated V-movement of the topmost verb in the embedded clause to license the imperative.¹⁰

- (23) a. *”Kizárt, hogy ”részt vegyünk ebben a projektumban.*
 excluded that part-ACC take-SUBJ/IMP-1PL this-in the project-in
 project-in
- b. **”Kizárt, hogy ”vegyünk részt ebben a projektumban.*
 excluded that take-SUBJ/IMP-1PL part-ACC this-in the project-in
 ‘It is out of the question that we take part in this project.’
- (24) a. *”Elvárja, hogy ”részt vegyünk ebben a projektumban.*
 expect-3SG that part-ACC take-SUBJ/IMP-1PL this-in the project-in
 project-in
- b. *”Elvárja, hogy ”vegyünk részt ebben a projektumban.*
 expect-3SG that take-SUBJ/IMP-1PL part-ACC this-in the project-in
 project-in
 ‘He expects us to take part in the project.’
- (25) a. *”Megparancsolta, hogy ”jussak be a házba.*
 VM-ordered-3SG that get-SUBJ/IMP-1SG in the house-into

- b. **”Megparancsolta, hogy ”bejussak a házba.*
 VM-ordered-3SG that in-get-SUBJ/IMP-1SG the house-into
 ‘He ordered that I get into the house.’

Thus, climbing can be avoided if the topmost verb is in the imperative, and is licensed by V-movement. This is a possibility only if the matrix predicate allows an imperative complement. If the matrix verb selects a subjunctive, or takes a declarative complement, climbing in the embedded clause is obligatory, as expected.

To summarize, so far I argued that in the case of climbing a specifier position is projected in order to avoid stressing of the stress avoiding verb which cannot take neutral main stress. If focussing happens climbing is blocked as it would be an unnecessary operation.

5. Climbing: Syntactic XP-movement

At this point I would like to underline that climbing (or focusing) is not an instance of movement on the PF branch, following Spellout. This is so because it observes conditions on syntactic movement, for example the adjunct island constraint as is illustrated in (26).¹¹ It would be unexpected from an instance of PF-movement to observe subadjacency, which is essentially the syntactic condition that requires a trace to be bound by the moved element.

- (26) a. *Be kell [CP hogy t_{be} engedjenek].*
 VM must that allow-SUBJ-3PL
 ‘They must allow me in.’ (CP complement to V ‘must’)
- b. **Be kell pro [CP (azért) hogy t_{be} engedjenek].*
 VM must that-for that allow-SUBJ-3PL
 ‘I need it so that they allow me in.’ (CP adjunct to V ‘must’)

The analysis of climbing presented in the previous section takes climbing to be phrasal movement, but note that it is in no way crucial to it whether this is in fact so. If climbing was head movement, blocking could not be a result of the fact that they compete for the same position. However, it would still hold that if focusing takes place, climbing is blocked because there is no trigger for it, as the stress avoiding verb is not clause initial anymore. This view is taken by Dalmi (1999). Nevertheless, let me argue here for the claim that climbing is XP movement.

Bródy (1997) noted that climbing may cross several clause boundaries, even tensed ones, which he takes as decisive argument against a treatment of climbing as head movement. É. Kiss (1998, this volume) provides a counter-argument to such a view. She claims that an analysis that takes a climbed particle to be in a

specifier position makes the prediction that the following sentence is grammatical, since the bar-level categories could be coordinated.

- (27) **János* [szét [[*akarja* t *vágni* a *rajzot*] és [fogja t
John apart want-3SG cut-INF the drawing-ACC and will-3SG
szedni a *rádiót*]]]
take-INF the radio-ACC
'John wants to cut the drawing to pieces and will take the radio apart.'

In fact, she draws a parallel with cases where the V and the VM form a lexical complex predicate. She claims that in both cases the ungrammaticality is due to the fact that the VM is in fact head-adjoined to the verb, thus the coordinated elements are not constituents.

- (28) **János* [szét [[*vágta* a *rajzot*] és [*szedte* a *rádiót*]]]
John apart cut-3SG the drawing-ACC and took-3SG the radio-ACC
'John cut the drawing to pieces and took the radio apart.'

To provide further support for her position, Katalin É.Kiss (p.c.) provides the example in (29). According to her, (29) is a coordination of bar-level categories. Since, the focused constituent is not head-adjoined to the finite verb, but is in a specifier position, it is no surprise that coordination below it is possible.

- (29) [?]*JÁNOS akarja SZÉTVÁGNI a RAJZOT és fogja*
John want-3SG apart-cut-INF the drawing-ACC and will-3SG
SZÉTSZEDNI a RÁDIÓT.
apart-take-INF the radio-ACC
'JOHN wants to CUT the DRAWING to PIECES and will TAKE the RADIO APART.'

But note that (29) is only possible if the constituents in the second conjunct are disanaphoric to the corresponding constituents in the first conjunct. In other words, the special intonation of (29), indicated by the capitals, is crucial. Thus the status of (30a) is seriously degraded and (30b) is ungrammatical.

- (30) a. [?]**JÁNOS akarja szétszedni a TÉVÉT és fogja*
John want-3SG apart-take-INF the telly-ACC and will-3SG
szétszedni a RÁDIÓT.
apart-take-INF the radio-ACC
'JOHN wants to take apart THE TELLY and will take apart THE RADIO.'

- b. **JÁNOS akarja szétszedni a tévét és fogja*
 John want-3SG apart-take-INF the telly-ACC and will-3SG
szétszedni a tévét.
 apart-take-INF the telly-ACC
 'JOHN wants to take apart the telly and will take apart the telly.'

If (29) involved coordination of bar-level categories below the focus, then this disanaphora requirement would be unexpected. Williams (1997) argues that the disanaphora requirement is a hallmark of coordinate structures with ellipsis. In particular, he argues that in the case of coordinate ellipsis, any constituent that is present in the second conjunct has to be disanaphoric to the corresponding constituent in the first conjunct. He also shows that no disanaphora requirement holds of ordinary coordination structures, where no elision took place. Following Williams's (1997) argumentation, I would like to propose that the observed disanaphora requirement in (30) shows that (30) and (29) involve FP coordination, with conjunct reduction in the second clause. So the structure for (29) is really as in (31).

- (31) [?][_{FP} *JÁNOS akarja SZÉTVÁGNI a RAJZOT*] és [_{FP} ~~*JÁNOS*~~
 John want-3SG apart-cut-INF the drawing-ACC and John
fogja SZÉTSZEDNI a RÁDIÓT]
 will-3SG apart-take-INF the radio-ACC
 'JOHN wants to CUT the DRAWING to PIECES and will TAKE the RADIO
 APART.'

If this is on the right track, then the reason why (27) (and also possibly (28)) is ungrammatical might be that particles cannot undergo conjunct reduction, while focused DPs can. Although it is not clear to me why this should be so, some support for this idea comes from coordination under topicalized particles. As (32) shows, a topicalized particle, cannot undergo conjunct reduction either. (32) is ungrammatical, while the first conjunct of (32) on its own would be grammatical, indicating that there is nothing wrong with particle topicalization as such. Under É. Kiss's view this is unexpected, as the particle is not in a head-adjoined position. If one assumes the presence of a functional Topic head, then the particle is in [Spec, TopicP] otherwise it is adjoined to FP. But in any case, particle topicalization, is phrasal movement, thus the possibility of coordination under the landing site of the moved element should be possible.

- (32) *_[TopicP] *Haza*_i _[FP] *JÁNOS* *t_i* *küldte* *a* *CSOMAGOT*] *és* _[TopicP]
 home John sent-3SG the package-ACC and
~~*haza*~~ _[FP] *PÉTER* *t_j* *hozta* *a* *LEVELET*]
 home Peter brought-3SG the letter-ACC
 'As for home, JOHN sent the package (there) and Peter brought the letter (there).'

To conclude, I attempted to show in this section that climbing is syntactic XP-movement. I argued that what É. Kiss takes to be coordination of F-bar-level constituents is in fact not that, but coordination of FPs and conjunct reduction in the second conjunct. I also gave some support for the idea that particles cannot undergo conjunct reduction. If so, the ungrammaticality of (27) follows irrespective of the position of the particle. Thus, the data seem compatible with an analysis of particle climbing in terms of syntactic XP movement.

6. Cross-linguistic comparison: The Basque particle *ba*

The phenomenon of stress-avoidance seems to occur in other languages, too. For example, as Ortiz de Urbina (1994) reports, the occurrence of the Basque particle *ba* is restricted to the following contexts. Basque has a handful of verbs that form a synthetic unit with their auxiliary. Periphrastic forms have 'V aux' order, synthetic forms, 'aux-V' (cf. (33), (34)). Basque is a rigid V-final language. If the verb or auxiliary is to be focused, it is moved to an initial position. In (33), the V Aux complex, in (34), the Aux-V complex has fronted to be focused.

- (33) *EROSI du Jonek liburua.*
 Bought has John book
 'John HAS bought a book.'
- (34) *(BA) *dator Jon orain.*
 PRT INFL-come John now
 'John COMES now.'

In (33) the fronted verb bears main accent, while in (34) a particle *ba* is inserted which receives main stress.¹² It seems from the stress patterns of (33) and (34) that the initial position is the main stress position in these Basque constructions. I assume following standard practice that the synthetic form is a morphological unit. I further assume that Basque auxiliaries that undergo synthetic complex formation are stress-avoiding. The synthetic Aux-V complex inherits the stress-avoiding property from the auxiliary (cf. Ackema this volume). As a result synthetic forms may not surface sentence initially. If a synthetic form is fronted, something has to

appear in front of it to take up main stress in the initial position, thus in (34) the particle *ba* is inserted. Thus *ba*-insertion is a last resort stress-avoiding operation of the same kind as I argued above that particle climbing is in Hungarian.

If the parallel is valid, then we predict that the *ba*-insertion operation is blocked if a contrastively focused constituent precedes the ‘aux-verb’ complex (35a), but not by a sentence-initial topic (35b). This is because in (35a) the focused constituent bears main stress rendering the synthetic verb unstressed, while in (35b), the synthetic verb is initial, and thus receives main stress. This prediction is borne out:

- (35) a. *JONEK* (**ba*) *daki* *hori*.
 John PRT INFL-know that
 ‘JOHN knows that.’
 b. *Jonek*, *(*BA*) *daki* *hori*.
 John PRT INFL-know that
 ‘John, knows that.’

Thus, I tentatively conclude that *ba*-insertion in Basque is a stress-avoiding last resort operation.

7. Conclusion

In this paper I argued that particle climbing is a last resort operation to avoid stressing of a stress avoiding verb. As a result of the syntax-phonology mapping and the nuclear stress rule in Hungarian, the finite stress avoiding verb at the top of a series of infinitival complements involving stress avoiding verbs would end up in the position where main stress is assigned. Since a lexical property of these verbs disallows main stress falling on them, a last resort operation, particle climbing is invoked to save the structure.

I presented arguments in favor of a stress-driven approach to focus movement. If both views turn out to be correct we obtain an explanation for the intriguing fact that focusing and climbing block each other. This is because, in focus fronting, the focused element takes up main stress, and thus saves the stress avoiding verb. Additional climbing would be unnecessary and therefore a violation of economy.

I also presented arguments in support of the position that takes climbing to be an instance of syntactic XP-movement. Finally, I sketched a possible analysis of the Basque particle *ba*, suggesting that stress avoidance may trigger last resort operations in other languages as well.

Notes

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1. However, see Ackema (this volume) for an analysis where the VM is in situ.
2. Bródy (1997) and Koopman and Szabolcsi (2000) take a different view. They assume that the VM is base-generated in a postverbal position along with the arguments of the verb and that the VM-V order in neutral sentences is derived by movement of the VM.
3. See Szendrői (2001) for a more detailed discussion of the phonology-syntax mapping and the nuclear stress rule in Hungarian, English and Italian.
4. See É. Kiss (1992), Vogel and Kenesei (1987, 1990) for similar approaches; Kálmán and Nádasdy (1994) for a different approach. See Szendrői (2001) for a comparison of some of these.
5. Throughout the paper, main stress is indicated by double quotes in the syntactic representation, and focus is indicated by caps. In the prosodic representation, which is always given above the syntactic representation, prosodic words are marked by ω , while prosodic phrases are marked by ϕ . The prosodic word that bears main stress is in bold.
6. The complementizer does not indicate the left edge of the clause for the syntax-phonology mapping principle as it is a functional head, not a lexical one. Functional heads are metrically invisible (Zubizarreta 1998). In (8) *hogy* 'that' is assumed to cliticize onto the preceding verb. Arguably, it may also cliticize onto the following word. This does not effect the argumentation presented here.
7. The optional stress heard on the lowest infinitive is secondary, or phrasal stress. In Szendrői (2001) I show that phrasal stress is deleted in Hungarian if the phrase is accessibly discourse-linked in Ariel's (1990) sense. As expected, the lowest infinitive is unstressed if it is mentioned in previous discourse.

- (i) A: "Mikor akarsz 'hazamenni?
 when want-2SG home-go-INF
 'When do you want to go home?'
 B: Csak "reggel fogok akarni hazamenni.
 only morning will-1SG want-INF home-go-INF
 'I will only want to go home in the morning.'

8. É. Kiss (p.c.) claims that some Hungarian speakers allow so-called partial climbing, i.e. a focused phrase precedes the finite verb and particle climbing targets a position immediately preceding one of the infinitival heads:

- (i) Figyelj! "Most fogja "szét; kezdeni fűrészelni; a bűvész a nőt!
 look-IMP now will PV start-INF saw-INF the illusionist the woman-ACC
 'Look! The illusionist will start sawing the woman into to two now.'

Note that the questionnaire survey reported by Szendrői and Tóth (this volume) did not find speakers of this dialect. Nevertheless, if such dialect existed, under the present analysis,

it would have to be assumed that in this dialect, at least optionally, more than one intonational phrase is formed in the case of complex sentences involving infinitival complements. Thus, in this dialect, it is expected that two main stresses are heard in an utterance like (i), one on the focused constituent and one on the particle. If the argumentation following van Riemsdijk (1998) is on the right track, this would mean that the infinitival heads that trigger climbing would be fully lexical rather than semi-lexical in this dialect, and thus not form part of an extended projection of the lowest verb.

9. (19b) is, of course, grammatical under the reading that puts focus on the stress-avoiding verb *kezdt* ‘started’. Similarly, (20b) is grammatical under the reading where *haza* ‘home’ is contrastively focused in the embedded clause. But this is irrelevant here.

10. It is an independent fact that imperative licences stress avoiding verbs in the sentence-initial position. I speculate that stress avoiding verbs can be sentence-initial and bear stress in this case (cf. (i)) in the same way they can do so if they are focused (cf. (ii)).

- (i) *Akarj felmászni!*
‘(I want you to) want to climb up!’
- (ii) *De hiszen én AKAROK felmászni!*
‘But, I DO WANT to climb up!’

11. Focusing also licenses parasitic gaps. This can be illustrated in Hungarian as follows. In (i), the focused element is an indefinite DP. It triggers indefinite agreement on the verb in the adjunct clause, indicating that it binds a trace in that clause as well.

- (i) *Egy "könyvet_i rakott el t_v t_i anélkül, hogy megnézett t_i volna.*
a book-ACC put-INDEF away without that VM-looked-INDEF would
‘He put away a BOOK without reading (it).’

One might argue that the account presented here entails that climbing should also license parasitic gaps, as climbing and focusing is analyzed in a parallel fashion. As (ii-a) shows, climbing of ‘proper’ verbal particles does not license parasitic gaps, while climbing of other verbal modifiers, such as bare nouns may arguably do so.

- (ii) a. **Péter haza_i akar t_i menni anélkül, hogy t_i telefonálna.*
Peter home wants go-INF without that would.phone-INDEF
‘Peter wants to go home without phoning (home).’
- b. *Kenyeret_i akar t_i enni, anélkül, hogy t_i szelne/*é*
bread-ACC wants eat-INF without that would.cut-INDEF/DEF
‘He wants to eat bread without cutting slices (of it).’

This behavior is not surprising if parasitic gaps are understood to turn the adjunct CP into a predicate, which is licensed by being predicated of a suitable NP (Neeleman 1994b, following Chomsky 1977, 1986). A particle, which is itself predicative, cannot act as an argument licensing a predicate. A bare noun object, on the other hand, may do so. The bare noun is, of course, part of the complex predicate *kenyeret vesz* ‘bread-acc buy’, but this does not mean that the bare noun itself would be predicative. The details of this analysis are left open here. Nevertheless, I tentatively conclude that even though focusing licenses parasitic gaps,

and focusing and climbing are treated in a parallel fashion, this does not imply that particles should license parasitic gaps in a climbing construction.

12. Ortiz de Urbina (p.c.) confirmed that the constituent bearing main stress is the V in (33), the particle *ba* in (34) and (35b), and the focused constituent in (35a). He also informed me that the particle *ba* also occurs in some cases where the synthetic auxiliary-V complex does not seem to be stress-avoiding. According to him, these are only a handful of lexicalized forms.

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Particles and phonologically defective predicates*

Anikó Csirmaz

This paper compares two constructions and two languages. Based on the difference between Dutch head particles and phrasal ones, I will propose that the same difference exists in Hungarian. Verbal modifiers (VMs) – which can include postpositions, adverbs, adjectives and nouns – behave identically to Dutch head particles when they consist of head material only (which I will term light verbal modifiers) in that they can incorporate into the verbal head. Heavy verbal modifiers, that are phrasal, must move to the specifier position of a PredP projection; again, similarly to Dutch. I will also suggest that the Dutch particle-like behavior is not only exhibited by the traditional class of verbal modifiers. Apart from this class of elements, I analyze the designated arguments of so-called Pred verbs (stress-avoiding verbs in the terminology of Komlósy 1992 and É. Kiss 1994) as also similar to Dutch particles. I will argue that the properties of Pred verbs can be described by analyzing Pred verbs as phonologically defective – similarly to Hungarian auxiliaries¹ –, and by assimilating designated arguments to verbal modifiers. In the discussion of this paper I will assume the minimalist framework of Chomsky (1993). With respect to Hungarian clause structure, I will assume the following functional positions (an asterisk indicates possible recursion):

- (1) [_{TopP} Topic* [_{QP} Quantifier* [_{FP/NegP} Focus / *nem*_{Neg} [_{VP} verb XP*]]]]
(where the arguments of the verb appear in VP prior to movement)

The paper is organized as follows. Section 1 summarizes the arguments of Koster (1994) for the independently motivated head incorporation and PredP-analysis of Dutch particles. In Section 2, I will propose that a similar strategy is viable for Hungarian verbal modifiers as well; Hungarian verbal modifiers and Dutch particles then behave on a par. Section 3 introduces Pred verbs, a verb class which requires a designated argument to precede the verb in neutral sentences. I will propose that even though it may seem feasible to treat designated arguments as foci, that analysis is not desirable either on interpretational or distributional grounds. Section 4 con-

tains an analysis of designated arguments that assimilates them to verbal modifiers, arguing that no distinct class of designated arguments needs to be maintained. In Section 5 I consider the distribution of verbal modifiers in Pred verbs, and suggest that Pred verbs are phonologically defective, similarly to Hungarian auxiliaries. Finally, Section 6 summarizes the main points of the paper.

1. Phrasal and head particles in Dutch

In this section I summarize the motivation of establishing two mechanisms for the placement of particles in Dutch: incorporation and movement to the specifier of a PredP projection. I will offer some additional facts that support the possibility of an incorporation-based analysis, and show that the same facts that argue for incorporation also hold in Hungarian.

Koster (1994) and Zwart (1994, 1997) observe a distributional difference between particles that have only head material on the one hand, and those that are phrasal, on the other. They propose that phrasal particles move to the specifier position of a projection above VP that they dub PredP. The specifier position of PredP hosts material that forms a semantic complex with the verb, a complex predicate. Because of that function, NPs that appear in that position must be weak, since they do not count as independent arguments.

In Dutch, phrasal particles must move to this projection. Particles that comprise of only head material may incorporate into the verbal head, not making use of the PredP projection, or may move to Spec,PredP themselves. The claim that both of these strategies are independently needed is corroborated by the contrast between the particle constructions below (Koster 1994, (15) and (16)).

- (2) a. **dat hij het huis zou willen erg schoon maken*
 that he the house should will very clean make
 ‘that he would like to make the house very clean’
 b. *dat hij het huis erg schoon zou willen maken*
 that he the house very clean should will make
 ‘that he would like to make the house very clean’
- (3) a. *dat hij het huis zou willen schoon maken*
 that he the house should will clean make
 ‘that he would like to clean the house...’
 b. *dat hij het huis schoon zou willen maken*
 that he the house clean should will make
 ‘that he would like to clean the house...’

In (2), the phrasal particle must precede the highest auxiliary, and cannot appear to the immediate left of the verb *maken*. In the case of particles that contain only head material, as in (3), both of these possibilities are attested: the particle either precedes the highest auxiliary, or it precedes only the lowest verb with which it is associated. In the patterns above, phrasal particles must appear in Spec,PredP. As suggested by Koster (1994), this option is also available for particles with head material only – hence the grammaticality of (3b). However, head particles may also incorporate into the verb *maken*, in which case they will be adjacent to the lowest verb in the verbal complex.

The same type of behavior, where head particles have freer distribution, is illustrated by the *aan het* construction (Koster 1994, (13), (14)):

- (4) a. **Hij is het huis aan het erg schoon maken.*
 he is the house at it very clean make
 ‘He is making the house very clean.’
- b. *Hij is het huis erg schoon aan het maken.*
 he is the house very clean at it make
 ‘He is making the house very clean.’
- (5) a. *Hij is het huis aan het school maken.*
 he is the house at it clean make
 ‘He is cleaning the house.’
- b. *Hij is het huis school aan het maken.*
 he is the house clean at it make
 ‘He is cleaning the house.’

Once again, the phrasal particle cannot be adjacent to the lexical verb, but it must precede the phrase *aan het*. Head particles may either appear to the right or left of *aan het*. The distribution can be accounted for by assuming that phrasal particles must appear in Spec,PredP, which appears to the left of the *aan het* phrase. Head particles may either move to this position as well (5b), or may incorporate into the verb, and so appear to the right of *aan het* (5a).

Neeleman (1994) argues that not only bare particles, but other elements, including bare nouns also incorporate into the verb. From among the various tests he uses, the present discussion will be restricted to nominalization. A particle-and-verb unit can undergo nominalization both in Dutch (6a) and Hungarian (6b).

- (6) a. *dat constante de belastingdienst opbellen*
 that constant the tax-authorities up-phoning
 ‘that constant calling of tax authorities’ (Neeleman 1994:27 (36))
- b. *be-menet* (Koopman & Szabolcsi 2000:18 (12))
 in-go-AFF
 ‘in-going’

To summarize the data, phrasal particles must move to Spec,PredP, and thus there is only one position available for them in the structure. Particles that contain only head material have two strategies at their disposal: they either move to Spec,PredP as a phrasal unit – and thus behave identically to phrasal particles –, or they incorporate into the verbal head. (2) shows that within a Dutch verbal complex, only a single PredP is available, dominating the highest auxiliary. Phrasal particles then have only the option of preceding the matrix auxiliary.

In the next sections, I will suggest that the two strategies – incorporation and movement to Spec,PredP – are also attested in Hungarian. I will claim that light verbal modifiers (that have only head material) may incorporate into the verb, and heavy verbal modifiers (with phrasal material) must move to Spec,PredP. I will also present a group of verbs that exhibit auxiliary-like behavior, and suggest that these verbs have a designated argument that must move to Spec,PredP.

2. Light and heavy verbal modifiers in Hungarian

In this section I will adopt the independently motivated distinction between head and phrasal particles. With respect to Hungarian verbal modifiers (that include particles, adjectives, postpositions and bare nouns), I will assume that they have to move to Spec,PredP when phrasal, and can incorporate into the verbal head when containing only head material. The relevant difference that distinguishes light verbal modifiers (which consist of a mere head) and heavy verbal modifiers (which are of a phrasal status) is their possibility of appearing in a roll-up construction. If roll-up involves head movement, then it should come as no surprise that heavy VMs may not appear there. I will also consider the raising of verbal modifiers to the matrix clause, and propose that it is triggered by phonological requirements of a matrix auxiliary. It will also be pointed out that the fact that heavy VMs can appear in two different clauses suggests that Hungarian PredPs may occur in a position other than the matrix clause.

Whether a verbal modifier has only head material or something more affects its behavior. Most importantly, roll-up or inversion is possible with light VMs, but impossible with heavy VMs. In the examples below, the underlying word order is given in (a), and the roll-up structure in (b).

- (7) a. *Nem fogok akarni olvasni újságot.*
 not will-I want-INF read-INF newspaper-ACC
 'I will not want to read a newspaper.'
- b. *Nem fogok újságot olvasni akarni.*
 not will-I newspaper-ACC read-INF want-INF
 'I will not want to read a newspaper.'
- (8) a. *Nem fogok akarni ósdi képes magazinokat olvasni.*
 not will-I want-INF old-fashioned picture-ADJ magazines-ACC
 read-INF
 'I will not want to read old-fashioned picture magazines.'
- b. **Nem fogok ósdi képes magazinokat olvasni akarni.*
 not will-I old-fashioned picture-ADJ magazines-ACC read-INF
 want-INF
 'I will not want to read old-fashioned picture magazines.'

The different behavior in roll-up constructions of the two VM types can be straightforwardly accounted for by assuming a different status of the two VMs along the lines of Dutch particles. Let us assume that a roll-up structure arises as the result of the cyclic incorporation of verbs, as shown in (9).

- (9) a. *Nem fogok énekelni kezdeni akarni.*
 not will-I sing-INF begin-INF want-INF
 'I will not want to begin to sing.'
- b. [_{NegP} *nem* [_{Neg'} *fogok* [_{VP} [[*énekelni*] *kezdeni*] *akarni*] *t*_{fogok}
 [_{InfP} *t*_{énekelni} *kezdeni* *akarni* [_{InfP} *t*_{énekelni} *kezdeni* [_{InfP} *t*_{énekelni}]]]]]]

Assuming that the matrix verb exorporates and moves into a Neg head, the roll-up structure requires that all the verbs incorporate into the higher verb, until the matrix clause is reached. A verbal modifier can take part in such a structure then only if it is a head itself, and has incorporated into the most deeply embedded verb:

- (10) a. *Nem fogok újságot olvasni akarni.*
 not will-I newspaper-ACC read-INF want-INF
 'I will not want to read a newspaper.'
- b. [_{NegP} *nem* [_{Neg'} *fogok* [_{VP} [[*újságot*] *olvasni*] *akarni*] *t*_{fogok}
 [_{InfP} *t*_{újságot} *olvasni* *akarni* [_{InfP} *t*_{újságot} *olvasni* [_{InfP} *t*_{újságot}]]]]]]

If incorporation is a prerequisite to taking part in a roll-up structure, then it follows straightforwardly that heavy VMs, that have more than mere head material, cannot appear in such constructions. The analysis of Dutch particles can be imple-

mented in Hungarian in that Hungarian light VMs can – although perhaps do not necessarily have to – incorporate into the verb, and that heavy VMs must move to Spec,PredP.

Light verbal modifiers do not necessarily incorporate into the verbal head, but they may also move to Spec,PredP; this time including only head material, but having phrasal status. Since only phrases can be topicalized, contrastive topic light VMs are an instance of this structure:

- (11) *Újságot János soha nem olvasott.*
 newspaper-ACC J-NOM never not read
 ‘As for newspapers, János never read them.’

Other arguments for the (possible) phrasal status of light verbal modifiers hinge on specific assumptions about clausal structure and interpretation. For example, given the assumption that contrastive focus interpretation can only be assigned to material within Spec,FP, the specifier of focus phrase, (12), where *el* is a VM, also supports the phrasal status of VMs (cf. Koopman & Szabolcsi 2000):

- (12) *EL mentem, nem ki.*
 away went-1SG not out
 ‘I went away, not out[side].’

However, if contrastive focus interpretation is not assumed to be tied to Spec,FP exclusively within the focus projection, then (12) does not provide an unquestionable support for the possible phrasal status of verbal modifiers. The focus head (13a), or part of a complex focus head (13b) can also be interpreted contrastively:

- (13) a. *ETTEM, nem aludtam.*
 ate-1SG not slept-1SG
 ‘I ate, and did not sleep.’
 b. [*EL mentem*], *nem ki.*
 away went-1SG not out
 ‘I went away, not out[side].’

Following Brody (1995) in assuming that verb movement to the focus head is head movement, it is then also possible for an element within the focus head to be contrastively focused. Independently of the fact that verbal modifiers can be contrastively focused, their possible contrastive topic status shows that even light VMs can appear as phrases.

Let us consider to what extent the analyses of Dutch phrasal particles and Hungarian heavy VMs run parallel. According to the analysis of Koster (1994), in Dutch PredP dominates the matrix verb – from this it follows that phrasal particles must precede the matrix auxiliary, as in (2). This position of PredP immediately de-

rives the Hungarian (14), on the assumption that heavy VMs obligatorily move to Spec,PredP. In (15), however, the account faces problems. If negation requires the matrix verb to move to a higher Neg head, as in (10), and if PredP immediately dominates the matrix VP, then (15b) is predicted to be grammatical, and (15a) is ruled out, contrary to fact.

- (14) *Ósdi képes magazinokat fogok akarni olvasni.*
 old-fashioned picture-ADJ magazines-ACC will-I want-INF read-INF
 'I will want to read old-fashioned picture magazines.'
- (15) a. *Nem fogok akarni ósdi képes magazinokat olvasni.*
 not will-I want-INF old-fashioned picture-ADJ magazines-ACC read-INF
 'I will not want to read old-fashioned picture magazines'
- b. **Nem fogok ósdi képes magazinokat akarni olvasni.*
 not will-I old-fashioned picture-ADJ magazines-ACC want-INF read-INF
 'I will not want to read old-fashioned picture magazines.'

In order to derive (15a), let us assume that PredP is projected on top of the lowest VP as well, whose head selects the verbal specifier. A PredP in the lowest clause will yield (15a), where the heavy VM must move to Spec,PredP. It still remains to be accounted for why the heavy VM moves to precede the matrix verb in (14), and why a similar move is preempted in (15b). To accommodate these properties, I adopt an account based on Dalmi (1999) and Szendrői (1999, 2001). These accounts share the hypothesis that the auxiliaries of (14) and (15) are phonologically light. Because of this property, they cannot be assigned phrasal stress. This property is illustrated in (16), where the behavior of an auxiliary is contrasted with that of a non-auxiliary; an apostrophe indicates phrasal stress.

- (16) a. AUXILIARY
 *'*János fog olvasni.*
 J-NOM will-3SG read-INF
 'János will read.'
- b. NON-AUXILIARY
 '*János szeret olvasni.*
 J-NOM likes read-INF
 'János likes to read.'

In a grammatical construction containing an auxiliary, it must be ensured that phrasal stress will fall not on the auxiliary, but on some other element. There

are a variety of ways to satisfy this requirement: either a focused constituent, the negation *nem*, or some other element (a VM or an infinitival²) may precede the auxiliary:

- (17) a. FOCUS
 '*JÁNOS fog olvasni.*
 J-NOM will-3SG read-INF
 'It is János who will read.'
- b. NEGATION
 '*János 'nem fog olvasni.*
 J-NOM not will-3SG read-INF
 'János will not read'
- c. '*János 'újságot fog olvasni.*
 J-NOM newspaper-ACC will-3SG read-INF
 'János will read a newspaper.'

As (17c) shows, a VM may move to precede the auxiliary, and receive phrasal stress – instead of the non-stressable auxiliary. The phonological lightness of auxiliaries can account for examples (14) and (15) with the addition of yet another assumption; namely, that only the matrix verb triggers movement motivated by phonological deficiency. If the matrix verb is an auxiliary, it cannot receive phrasal stress; it must appear in one of the environments in (17).

Let us consider examples (14) and (15) again. In (14) neither a focused constituent, nor negation is present in the matrix clause. To preempt phrasal stress falling on the matrix auxiliary, the VM moves to precede it – thus supplying the necessarily phonological material for stress placement. In (15a), the matrix clause contains negation. As also shown in (17b), in this case it is the negative particle *nem* which bears phrasal stress, and the prosodic requirement of the auxiliary is satisfied: the heavy VM has moved to Spec,PredP within the lowest clause, and is not forced to move further, all relevant requirements being satisfied. In (15b), however, an extra movement took place; that of the VM. The heavy VM moved to a higher position. This movement is unmotivated – the auxiliary does not bear phrasal stress, and the heavy VM has already passed through a Spec,PredP position. Since this movement is superfluous, (15b) is ruled out on economy grounds.

In this section I suggested that, similarly to Dutch, in Hungarian there is also a distinction between phrasal (heavy) and head (light) verbal modifiers. Since light VMs are heads, they can incorporate into the selecting verb, and may appear in a roll-up structure. Heavy VMs must move to Spec,PredP, preempting their appearance in roll-up constructions. I also suggested that the position of PredP is different in Dutch and Hungarian. In Dutch, PredP is projected on top of the matrix auxiliary, forcing any phrasal particle to precede the matrix verb. In Hungarian PredP dominates the verb selecting the verbal modifier, and matrix auxiliaries. Through

Spec,PredP, the position obligatorily occupied by a heavy VM, it may move on to the matrix clause – but only if required by the matrix predicate. If it is otherwise ensured that the matrix auxiliary does not receive phrasal stress (either by the presence of a focused element or negation), then the heavy VM is not forced to move; and by economy considerations, it is then prohibited to move. It should be noted that while no strong NPs are allowed to stay within the PredP in Dutch (in fact, the analysis of Koster 1994 makes it impossible for strong NPs to move into PredP), the present analysis of Hungarian verbal modifiers allows for this possibility.

With respect to the position of PredP projections, I adopted the analysis of Koster (1994) in that PredP is found in the matrix clause only. For Hungarian, I suggested that PredP is present in both the matrix clause and in a position that immediately dominates the verb that selects for the verbal modifier. This difference between the two languages can be accounted for by assuming that Dutch auxiliaries strictly subcategorize for an infinitival complement (either a bare infinitive, or one with the particle *te*). Hungarian auxiliaries, on the other hand, permit a wider range of complement categories, which also includes PredP. Thus Dutch selectional restrictions are responsible in the unique matrix position of PredP.

The other two differences between PredP in the two languages under discussion are recursivity and the possibility of non-weak arguments appearing in Spec,PredP. Recall that Koster (1994) argued that PredP forms a part of the predicate; thus a natural restriction on constituents within PredP is that they should be weak (based mostly on de Hoop 1992). In Dutch, then, PredP serves the function of making certain arguments part of the predicate, as the name of the projection suggests. In Hungarian, however, the analysis put forward above treats PredP as a licensing position rather, which licenses a single verbal modifier constituent when dominating the lexical verb, or bears the phrasal stress otherwise assigned to a finite auxiliary when appearing on top of an auxiliary. The uniqueness restriction on verbal modifiers in Hungarian, which is predicted if PredP is non-recursive, will be shown to manifest itself in the so-called verbal modifier hierarchy in Section 4.

The alternation between phrasal and head ('light') verbal modifier still needs to be addressed briefly. Based on Koster (1994), I suggested that light verbal modifiers have the option of either incorporating into the verbal head, or moving to Spec,PredP. Heavy verbal modifiers, that contain more than just head material, are forced to move to Spec,PredP for licensing purposes, having no other option. It is reasonable to ask at what point the choice between incorporation or movement to Spec,PredP must be made. Recall that here I am assuming the framework of Chomsky (1993). Within that framework, phrases and heads are defined contextually; any projection that projects no further is a maximal projection with a phrasal status (XP), and any minimal projection is a head (X^0). If light verbal modifiers are inserted into the derivation as heads, and project no further, then they are simultaneously heads and phrases. Thus from the position they were merged in, they are

free to move either as heads, to incorporate into the verbal head, or as phrases, and target Pred, projecting PredP. At the point where the light verbal modifier is merged into the structure no choice is made with respect to the status of the VM; this is only determined when the verbal modifier moves to attract the stress assigned to the verb.

In the following section I will introduce another verb class that – as it will be argued in a later section – also makes use of the PredP projection. These verbs, that I will dub Pred verbs, resist phrasal stress similarly to the auxiliaries described above. They preempt phrasal stress not by pied-piping phonological material from a lower clause, since they do not select for an embedded clause. Instead, the clause of these verbs must contain either focus or negation (as with auxiliaries); or – if both of these are lacking – a designated argument in preverbal position.

3. Pred verbs with a designated argument in focus?

This section will introduce the class of Pred verbs and sketch their behavior. I will first indicate the plausibility of treating Pred verb constructions as instances of focus constructions, and then argue against this approach.

Pred verbs – called ‘stress-avoiding’ verbs by Komlósy (1992), and in É. Kiss (1994) – are preceded in a neutral sentence by a certain argument that I will call ‘designated argument’ (the designated argument appears in boldface below).³ It is the designated argument that has phrasal stress, the verb appears unstressed.

- (18) *’János a ’könyvet az ’asztalon hagyta.*
 J-NOM the book-ACC the table-ON left
 ‘János left the book on the table.’

Also, whenever a Pred verb has its own verbal modifier, the verbal modifier will follow the verb in the neutral sentence:

- (19) *Az erdő a folyón túl terül el_{VM}*
 the forest-NOM the river-on beyond lies away
 ‘The forest lies across the river.’

This pattern is reminiscent of the distribution of focused constituents (which is indicated by capitals throughout the paper):

- (20) a. *János A KÖNYVET olvasta.*
 J-NOM the book-ACC read
 ‘It is the book that János read.’

- b. **János olvasta A KÖNYVET.*
 J-NOM read the book-ACC
 'It is the book that János read.'
- c. *János A KÖNYVET olvasta el_{VM}*
 J-NOM the book-ACC read away
 'It is the book that János finished reading.'

Foci, similarly to designated arguments, must precede the verb in the sentence, and make any verbal modifier associated with the same predicate follow the verb. However, designated arguments are not foci. First of all, designated arguments do not have focus interpretation; they are not interpreted either contrastively or emphatically, unlike foci. Preverbal foci are characterized by exhaustive interpretation. Given that the proposition in these cases is interpreted as being true of the maximal set denoted by the focus, a pair of utterances such as (21a) cannot describe the same situation. (21a(ii)) entails that the set of unknown animals is the maximal set of individuals that were found by *János*. This entailment clearly contradicts (21a(i)), which asserts that apart from unknown animals, the treasure was also found by *János*. Since the pair of utterances in (21a) cannot describe one and the same situation, both of these sentences can be said to entail exhaustive interpretation of their objects. Exhaustive interpretation is thus characteristic of preverbal foci. This is not true, however, of preverbal designated arguments, as in (21b). The utterances can be interpreted as describing the same scenario; and so no entailment of exhaustivity is involved.

- (21) a(i). *János A KINCSET ÉS AZ ISMERETLEN ÁLLATOKAT*
 J-NOM the treasure-ACC and the unknown animals-ACC
találta meg.
 found PERF
 'It was the treasure and the unknown animals that János found.'
- a(ii). *János AZ ISMERETLEN ÁLLATOKAT találta meg.*
 J-NOM the unknown animals-ACC found PERF
 'It was the unknown animals that János found.'
- b(i). *János kincsre és ismeretlen állatokra bukkant.*
 J-NOM treasure-on and unknown animals-on stumbled-on
 'János stumbled on treasure and unknown animals.'
- b(ii). *János ismeretlen állatokra bukkant.*
 J-NOM unknown animals-on stumbled-on
 'János stumbled on unknown animals.'

The distribution of foci and designated arguments is also rather different. If clausal negation is present, foci must be left-adjacent to negation; designated arguments, however, may freely follow the verb:

- (22) a. FOCUS
**János a könyvet nem vette AZ UTCÁN.*
 J-NOM the book-ACC not bought the street-on
 'János did not buy the book in the street'
- b. DESIGNATED ARGUMENT
János a könyvet nem tette az asztalra.
 J-NOM the book-ACC not put the table-on
 'János didn't put the book on the table'

Preverbal foci license postverbal focus, while a preverbal designated argument does not:

- (23) a. FOCUS
JÁNOS vett CSAK KÉT KÖNYVET.
 J-NOM bought only two books-ACC
 'It is János who bought only two books.'
- b. DESIGNATED ARGUMENT
**János az asztalra tett CSAK KÉT KÖNYVET.*
 J-NOM the table-on put only two books-ACC
 'János put only two books on the table.'
- b'. DESIGNATED ARGUMENT IS IN FOCUS
János AZ ASZTALRA tett CSAK KÉT KÖNYVET.
 J-NOM the table-on put only two books-ACC
 'It was on the table that János put only two books.'

Yet another difference can be detected in their distribution in non-neutral sentences. Foci must be either immediately preverbal (or left-adjacent to clausal negation) or appear in postverbal position. (Referential) designated arguments, however, are free to appear further to the left in the sentence. In (24a, b), a focused constituent and a designated argument precede a focused phrase, respectively. Foci are ungrammatical in such a position, whereas designated arguments are grammatical.

- (24) a. FOCUS
**[MOSZKVÁBAN] [KRUMPLIT] lehet kapni.*
 Moscow-in potato-ACC may buy-INF
 'Potatoes can be bought in Moscow.'
- b. DESIGNATED ARGUMENT
Moszkvába EZ AZ ÚT vezet.
 Moscow-in this-NOM the road-NOM leads
 'This road leads to Moscow.'

Thus even though the behavior of designated arguments appears to mimic that of foci, the two kinds of elements have both different interpretations and differ-

ent distribution, so the two classes of elements cannot be collapsed. With regard to interpretation, preverbal foci entail exhaustive interpretation of the focused constituent, while there is no such entailment of designated arguments. The distributional facts that indicated that foci differ from designated arguments include the licensing of postverbal focus and the fact that designated arguments, unlike foci, are free to appear in postverbal position. Thus designated arguments are not foci. However, designated arguments do not have to be considered as an independent class of elements. There is another class of constituents that immediately precede a verb, and attract phrasal stress from the verb: that of verbal modifiers. In the next section, I will compare designated arguments and verbal modifiers, arguing for the plausibility of treating them on par.

4. Pred verbs with a designated argument in PredP?

In the previous section I have considered the possibility of designated arguments being foci. Based on interpretational and distributional facts, I argued against this treatment. In this section I will consider whether designated arguments can be seen as verbal modifiers.

The distribution of designated arguments resembles that of verbal modifiers in that both precede the verb in a neutral sentence, and receive the phrasal stress otherwise assigned to the verb. They also behave identically in that both tend to appear in a postverbal position in a non-neutral sentence:

- (25) a. *János a könyvet az asztalon hagyta.*
 J-NOM the book-ACC the table-on left
 ‘János left the book on the table.’
 b. *János meg_{VM} látta a hegyet.*
 J-NOM PERF saw the hill-ACC
 ‘János saw the hill.’
- (26) a. *János A KÖNYVET hagyta az asztalon.*
 J-NOM the book-ACC left the table-on
 ‘It was the book that János left on the table.’
 b. *János A HEGYET látta meg_{VM}*
 J-NOM the hill-ACC saw PERF
 ‘It is the hill that János saw.’

The designated arguments of Pred verbs and heavy verbal modifiers share some other properties as well. For example, designated arguments cannot appear in a roll-up structure such as (27b), formed from (27a).

- (27) a. *János nem fogja akarni az asztalon hagyni a könyvet.*
 J-NOM not will-3SG want-INF the table-on leave-INF the book-ACC
 'János will not want to leave the book on the table.'
- b. **János nem fogja az asztalon hagyni akarni a könyvet.*
 J-NOM not will-3SG the table-on leave-INF want-INF the book-ACC
 'János will not want to leave the book on the table.'

This fact follows from the structure attributed to roll-up structures above. Since designated arguments are not heads, they are excluded in (27). However, when the designated argument is a single head, roll-up is possible:

- (28) *János nem fogja ott hagyni akarni a könyvet.*
 J-NOM not will-3SG there leave-INF want-INF the book-ACC
 'János will not want to leave the book there.'

Another property of designated arguments shared with verbal modifiers is that it is the designated argument that moves to the matrix clause to precede an auxiliary in a neutral sentence:

- (29) *János az asztalon fogja t_{az asztalon} hagyni a könyvet.*
 J-NOM the table-on will-3SG leave-INF the book-ACC
 'János will leave the book on the table.'

Based on the behavior of designated arguments reviewed so far, it can be concluded that they have a distribution similar to verbal modifiers – more specifically, to light VMs if the designated argument has only head material, and to heavy VMs if the designated argument consists of additional material as well.

4.1 Identifying Pred verbs

Before proceeding with the discussion, it is necessary to determine what verbs count as Pred verbs. So far I have relied on Komlósy (1992), who provides a non-exhaustive list of the verbs he terms 'stress-avoiding verbs'. He lists, as a property of this verb group, the fact that if the designated argument is definite, then only the stressed complement + unstressed verb order is neutral (Komlósy 1992:341):

- (30) *'Péter 'Jánosnál felejtette a 'füzetét.*
 P-NOM J-at forgot the notebook-POSS-ACC
 'Péter left his notebook at János' place.'

I take this to be one of the defining properties of Pred verbs. I assume that in the case of a non-Pred verb, a definite DP complement cannot function as a verbal modifier. If the complement is a definite DP that precedes an unstressed non-Pred verb, then it is interpreted as focus. A bare noun complement, however, behaves just like verbal modifiers do. This is illustrated in (31)–(32) below.

- (31) '*János 'létrát fest.*
 J-NOM ladder-ACC paints
 'János paints a ladder/ladders.'
- (32) a. '*János 'festi a 'létrát.*
 J-NOM paints the ladder-ACC
 'János paints the ladder.'
- b. '*János a 'létrát festi.*
 J-NOM the ladder-ACC paints
 'It is the ladder that János paints.' (a *létrát*: focus)
- b'. '*János a 'létrát 'festi.*
 J-NOM the ladder-ACC paints
 'János paints the ladder.' (a *létrát*: topic)

On the contrary, if the nominal is a complement of a Pred verb, then the behavior of a bare noun and a DP is identical in neutral sentences. A light designated argument (which contains only head material) can also precede an unstressed verb, just as verbal modifiers can:

- (33) '*János 'oda teszi a 'könyvet.*
 J-NOM there puts the book-ACC
 'János puts the book there.'

The behavior of definite designated arguments, however, is not like that of definite complements above. In (34a), the verb is interpreted as focused and is contrasted with some other suitable verb, unlike above. (34b), unlike the similar example with an unstressed non-Pred verb above, can be interpreted as a neutral sentence. (34b') is again interpreted as expressing some degree of contrast or emphasis on the verb – as if the verb was in focus.

- (34) a. '*János 'teszi a 'könyvet az 'asztalra.*⁴
 J-NOM puts the book-ACC the table-on
 'János PUTS the book on the table (and not throws it there).'
- b. '*János a 'könyvet az 'asztalra teszi.*
 J-NOM the book-ACC the table-on puts
 'János puts the book on the table.' / 'It is on the table that János puts the book.' (focus)

- b'. *'János a 'könyvet az 'asztalra 'teszi.*
 J-NOM the book-ACC the table-on puts
 'János PUTS the book on the table.'

That is, a bare noun is possible as a verbal modifier with all verbs – given the fulfillment of some additional conditions, to be specified below. A full DP, which also contains a determiner, cannot do so; only in the case of Pred verbs. The designated arguments of Pred verbs must have the distribution of verbal modifiers, independently of their formal properties.

Another property of Pred verbs is that they do not observe a so-called verbal modifier hierarchy (sketched in Csirmaz 1999). In the case of non-Pred verbs, a certain hierarchy of verbal modifiers can be observed. Whenever two potential verbal modifiers are present in a clause, the one higher on that scale must appear in the verbal modifier position, and the other functions as a non-VM argument. At the highest end of the hierarchy are two covert operators (as described by É. Kiss 1994), an existential and a progressive operator. If either one of them is present (I assume that the two cannot cooccur), then all other potential VMs are in postverbal positions or scrambled. I indicate canonical verbal modifiers, which precede the verb in the absence of these operators, with a subscript, and those constituents that function as a verbal modifier in the clause are included within square brackets.

- (35) a. [EXIST] *Jött föl_{VM} János a lépcsőn.*
 came up J-NOM the stair-on
 'It has happened (at least once) that János came up on the stairs.'
 b. [PROG] *Jött föl_{VM} János a lépcsőn.*
 came up J-NOM the stair-on
 '(When) János was coming up the stairs, ...'

If both of these covert operators are absent, then verbs are preceded by the canonical verbal modifiers, which include (directional) particles and the perfectivizing prefix *meg-*.

- (36) a. *János [meg_{VM}] mászta a lépcsőt.*
 J-NOM PERF climbed the stair-ACC
 'János climbed the stairs.'
 b. *János [be_{VM}] festette zöldre a kerítést.*
 J-NOM in painted green-onto the fence-ACC
 'János painted the fence green.'

In the absence of such light directional particles, predicative elements appear in the verbal modifier slot:

- (37) a. *János [zöldre] festette a kerítést.*
 J-NOM green-onto painted the fence-ACC
 'János painted the fence green.'
- b. *János [jól] bánik az állatokkal.*
 J-NOM well treats the animals-with
 'János treats animals well.'

Finally, if neither of these potential verbal modifiers are present, then a bare noun can function as a verbal modifier, as shown below.

- (38) a. *János [kerítést] fest.*
 J-NOM fence-ACC paints
 'János paints a fence/fences.'
- b. *János [újságot] olvas.*
 J-NOM newspaper-ACC reads
 'János reads a newspaper.'

Most verbs observe this hierarchy, thus the following are ungrammatical as neutral sentences – the highest potential verbal modifier is interpreted as having been stranded by the verb moving to some higher position:⁵

- (39) a. *János a kerítést festette be_{VM}*
 J-NOM the fence-ACC painted in
 'It was the fence that János painted.'
- b. *János állatokkal bánik jól.*
 J-NOM animals-with treats well
 'It is animals that János treats well (not people).'

The verbs that do not conform to this hierarchy are the Pred verbs themselves. If a canonical verbal modifier is also selected by the Pred verb, it will follow the verb in a neutral sentence, and a different argument functions as verbal modifier – contrary to what would be predicted. Square brackets indicate the constituent that is the verbal modifier in the sentence.

- (40) a. *Az erdő [a folyón túl] terül el.*
 the forest-NOM the river-on beyond lies away
 'The forest lies across the river.'
- b. *János [jól] néz ki.*
 J-NOM well looks out
 'János looks handsome.'

The canonical behavior of non-Pred verbs can be illustrated by examples parallel to the above:

- (41) a. *A férfi [el_{VM}] terült a földön.*
 the man-NOM away lied the ground-on
 ‘The man was sprawled on the ground.’
 b. *János jól [el_{VM}] bánt vele.*
 J-NOM well away treated him-with
 ‘János treated him badly.’

By comparing (40) and (41), the exceptional behavior of Pred verbs can be easily observed. Instead of the canonical *el* and *ki*, it is a PP with a full DP complement and a predicative adverb that are verbal modifiers, respectively.

To sum up, it was suggested that the verbs that have been termed Pred verbs above can be reliably isolated given (at least) two criteria. On the one hand, the nominal arguments behave differently when the complements of Pred verbs and when they are arguments of run-of-the-mill verbs. Bare nouns, in the absence of other higher-ranking potential verbal modifiers, function as verbal modifiers in both cases. Full DPs, however, have different distribution and interpretation. With non-Pred verbs, DP arguments can only be interpreted as foci if they precede an unstressed verb; whereas in the case of Pred verbs, this is straightforwardly compatible with a neutral sentence pattern. On the other hand, Pred verbs can be detected by the fact that they do not observe the verbal modifier hierarchy sketched above. Normally, potential verbal modifiers strictly observe the hierarchy, and the element that is higher on the hierarchy will function as the actual verbal modifier. With Pred verbs, this is not the case; their designated argument is the actual verbal modifier, irrespective of the form and function of other arguments.⁶

4.2 Summary

I suggested above two criteria for identifying Pred verbs. These can only be applied to (a) those Pred verbs whose designated argument is a case-marked DP, or (b) those that also have a canonical verbal modifier argument that constitutes an argument distinct from the designated argument. These criteria are still inadequate in providing the tools to determine whether all the verbs listed by Komlósy (1992) are actually Pred verbs. Some verbs have a PP designated argument and have no canonical verbal modifier argument, thus neither test is applicable:

- (42) *János a költözés mellett / ellen döntött.*
 J-NOM the moving beside / against decided
 ‘János decided for/against moving.’

Other verbs in the same list require a predicative argument and have no directional particles either, again making both tests inapplicable:

- (43) *Az összetekert újság látszóként szolgált.*
 the together-rolled newspaper-NOM telescope-as functioned
 ‘The rolled-up newspaper functioned as a telescope.’

However, for the majority of the potential Pred verbs the tests provide a tool for classification.

Designated arguments were argued to be similar to verbal modifiers in their behavior in neutral and non-neutral clauses as well as in being able to take part in roll-up and climbing. I also presented two criteria for isolating Pred verbs. According to these criteria, Pred verbs are special in that they make a certain argument (the designated argument) able to function as a verbal modifier if independent considerations would not allow it. The designated argument is a verbal modifier even if it contains a full DP or if the clause contains other potential verbal modifiers that are higher on the ‘verbal modifier scale’ – a prohibitive configuration in non-Pred verb environments.

Ideally, the exceptional verbal modifier status of designated arguments should be all that is needed to account for the behavior of Pred verbs. In the next section I will show that this ideal situation does not arise. If the Pred verb has a canonical verbal modifier argument, then the latter does not always follow the verb as would be predicted. I suggest that this is because of the phonological defectivity of Pred verbs; whenever possible, they prefer not to be stressed. In a neutral clause, the verb bears phrasal stress. This stress is borne by a designated argument in a finite clause, but once the designated argument is pied-piped by a finite auxiliary, stress falls on the verb again. Incorporating the canonical verbal modifier particle is a last resort strategy to evade stress placement on the verb – thus the verbal modifier will exceptionally precede the Pred verb.

5. Stress avoiding verbs and verbal modifiers

This section will focus on the behavior of verbal modifiers in the case of stress avoiding verbs that, apart from the designated argument, also select for a verbal modifier. In Section 5.1, I will show that the behavior of these predicates in embedded clauses is similar to those of embedded focus constructions. Pointing out crucial differences, I will propose an account of this structure that is independent of that of focus. In Section 5.2, it will be suggested that Pred verbs can be successfully assimilated to auxiliaries in triggering preverbal movement.

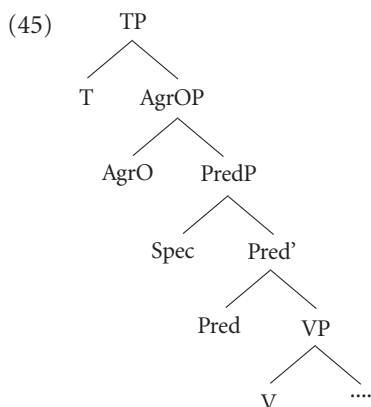
5.1 Verbal modifiers with Pred verbs

As it was already noted in Section 3, the verbal modifier of a stress avoiding verb must appear in postverbal position in a neutral sentence:

- (44) *Az erdő a folyón túl terül el_{VM}*
 the forest-NOM the river-on beyond lies away
 'The forest lies across the river.'

According to the hypothesis put forward in the previous section, designated arguments appear in Spec,PredP in neutral sentences. I also suggested that light verbal modifiers incorporate into the verb. If both of these assumptions are adopted, then the verb must excorporate from the complex head [_V *el_{VM}* + V] at some point. Excorporation will result in only the bare verb raising to the Pred head, yielding the surface order above.

Let us follow Koster (1994) with respect to the position of the Pred head within the structure. He assumes that PredP is dominated by AgrOP – and since AgrOP is dominated by TP in the framework of Chomsky (1993), by transitivity TP also dominates PredP. The structure is illustrated below.



Given that the first projection that dominates VP is PredP itself, excorporation can only be triggered by Pred. Within the framework adopted here, this can be achieved by assuming that the Pred head has a strong [+V] feature, and that the bare verb head is accessible for movement. If it is accessible, then moving the complex head can be ruled out for reasons of economy; pied-piping a complex head (with more phonological material) is more costly than moving just the bare verb. By adopting excorporation, it is possible to account for the surface order in single clause sentences, where the stress avoiding verb has a verbal modifier argument as well. However, if there is also an auxiliary in a neutral structure, the verbal modifier precedes the stress avoiding verb, as shown in (46).

- (46) *Az erdő a folyón túl fog el_{VM} terülni.*
 the forest-NOM the river beyond will-3SG away lie
 'The forest will lie across the river.'

In (46), as it was described above, the designated argument is pied-piped to the matrix auxiliary, to ensure that the phrasal stress otherwise assigned to the auxiliary will fall on the designated argument, and not on the auxiliary itself. By the above account, which requires the bare lexical verb to move to the Pred head, it is predicted that the verbal modifier will surface in postverbal position. The variation in the position of the verbal modifier immediately recalls focus constructions. If focus is present in a finite clause, the verbal modifier must appear to the right of the verb. In the case of a nonfinite clause, the verbal modifier can either precede or follow the infinitival:

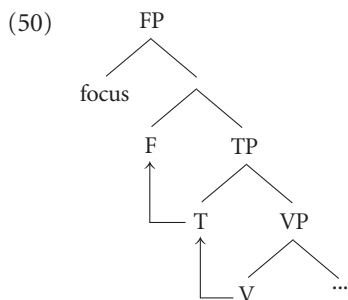
- (47) a. *János A SÓS SÜTEMÉNYT ette meg.*
 J-NOM the salty biscuit-ACC ate PERF
 'It is the salty biscuit that János ate up.'
- b. **János A SÓS SÜTEMÉNYT meg ette.*
 J-NOM the salty biscuit-ACC PERF ate
 'It is the salty biscuit that János ate up.'
- (48) a. *Jó lenne A SÓS SÜTEMÉNYT enni meg.*
 good be-COND the salty biscuit-ACC eat-INF PERF
 'It is the salty biscuit that would be good to eat up.'
- b. *Jó lenne A SÓS SÜTEMÉNYT meg enni.*
 good be-COND the salty biscuit-ACC PERF eat-INF
 'It is the salty biscuit that would be good to eat up.'

Disregarding for the moment the variation that is present in nonfinite focus constructions, but absent in embedded stress avoiding verb constructions, it appears that the same account may be viable for both (46) and (48). However, if the same account is adopted for both focus and the previous stress avoiding verb constructions, then (49) remains unaccounted for. In (49), where there is a focused constituent in a nonfinite clause with a stress avoiding verb, both preverbal and postverbal positions are available for the verbal modifier *el*.

- (49) a. *Jó lenne a városnak A FOLYÓ MELLETT terülnie*
 good be-COND the town-DAT the river beside lie-INF
el_{VM}
 away
 'It is by the river that it would be good for the town to lie.'

- a'. *Jó lenne a városnak A FOLYÓ MELLETT el_{VM} terülnie.*
 good be-COND the town-DAT the river beside away
lie-INF
 'It is by the river that it would be good for the town to lie.'
- b. *Jó lenne A VÁROSNAK terülnie el_{VM} a folyó mellett.*
 good be-COND the town-DAT lie-INF away the river beside
 'It is for the town that it would be nice to lie by the river.'
- b'. *Jó lenne A VÁROSNAK el_{VM} terülnie a folyó mellett.*
 good be-COND the town-DAT away lie-INF the river beside
 'It is for the town that it would be nice to lie by the river.'

It is not clear why the same mechanism, that results in the stranding of the verbal modifier, should be optional in (49) but unavailable in (46). Also, an account of the focus-related facts in (47)–(49), such as the one in Brody (1990), would not be compatible with the structure assumed in (45) – thus, if possible, an alternative account is preferred. Let us consider why Brody (1990) is incompatible with the Pred structure assumed so far. He suggests that the verbal modifier can be 'stranded' by the verb as the result of overt verb movement triggered by the T head. A nonfinite T head can be optionally strong. If it is strong, that is, has a strong [V] feature, then the verb is required to move overtly to the T head. If the [V] feature is weak, the movement will take place covertly, in the post-Spell out component. A focused constituent appears in Spec,FP, and the F head is overtly filled by a T head, as shown below.



In a nonfinite focus construction, the T head may either contain phonological material (if it had pied-piped the verb), or may be empty, if the [V] feature of T is weak. Thus the position of the verbal modifier is tied to the strength of T.

This way of dealing with (46) is not available. As indicated above, PredP immediately dominates VP; thus the only head that can trigger stranding is Pred, not T. Based on the data surveyed here, the verbal modifier of a stress avoiding verb must be stranded in finite neutral clauses, and cannot be stranded if the designated

argument has moved to a higher clause. In non-neutral clauses, the verbal modifier must be stranded in finite clauses, and can be optionally stranded in nonfinite ones.

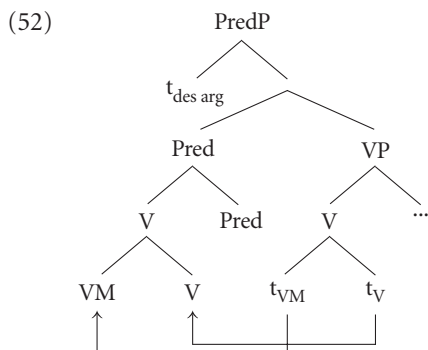
The behavior of verbal modifiers within non-neutral clauses is the same as those verbal modifiers that are selected by non-stress avoiding verbs; thus no special treatment is required for these cases. Within neutral clauses, the obligatory stranding of the VM was accounted for by assuming that Pred pied-pipes up the bare verbal head, by initiating excorporation from the complex [verbal modifier + verb] head. What remains to be accounted for is the fact that stranding the VM is prohibited in neutral clauses if the designated argument has moved to a higher clause. This case was illustrated by (46), repeated below.

- (51) *Az erdő a folyón túl fog el_{VM} terülni.*
 the forest-NOM the river beyond will-3SG away lie-INF
 ‘The forest will lie across the river.’

Recall from the previous section that the behavior of designated arguments and verbal modifiers is indistinguishable; designated arguments behave identically to verbal modifiers. If they contain only head material, they may participate in roll-up constructions just like verbal modifiers.

5.2 Pred verbs are auxiliary-like

Identifying designated arguments as (heavy) verbal modifiers, the behavior of stress avoiding verbs can be adequately described by assimilating them to auxiliaries. Auxiliaries cannot be assigned phrasal stress: thus they must appear in a non-neutral clause – where either the focused constituent or the negative particle bears phrasal stress – or in a neutral sentence, they must be preceded by either a verbal modifier or, lacking a VM, an infinitive pied-piped from a lower clause. Let us assume that this requirement holds not only of matrix auxiliaries, but also of stress avoiding verbs. The requirement that stress avoiding verbs not be stressed can be satisfied in various ways, as described above. In the case of a non-neutral clause, the phrasal stress is borne by the focus or negation in lieu of the verb, just as in the case of auxiliaries. In a neutral matrix clause, the stress is assigned to the designated argument in Spec,PredP. However, if the designated argument is pied-piped by a matrix auxiliary, the stress avoiding verb, as it stands, would bear phrasal stress. To preempt this, the stranded verbal modifier raises and adjoins to the verbal head again:



The no-stress requirement of stress avoiding verbs, however, is not always satisfied. If a stress avoiding verb has no verbal modifier, then the verb itself will be assigned phrasal stress after the designated argument has moved out, as in (53).

- (53) 'Moszkvába fog 'vezetni az 'új 'út.
 Moscow-in will-3SG lead-INF the new road-NOM
 'The new road will lead to Moscow.'

This fact can be accounted for by assuming that in Hungarian, PredP is not recursive within a single clause – contrary to what is argued for Dutch in Koster (1994), and in line with what was suggested in Section 2. If there is a single PredP on top of the VP projected by the stress avoiding verb, then, following the pied-piping of the designated argument, no phrasal material can preempt the assignment of phrasal stress to the verb.

The behavior of stress avoiding verbs is easily accounted for by an optimality theoretic treatment. Whenever possible, the stress avoiding verb is not stressed; but when there is no legitimate way to ensure that the stress avoiding verb will be unstressed, it can then receive stress. There is only one PredP dominating the VP projected by the stress avoiding verb, since Hungarian PredP is not recursive. Whenever the specifier position of PredP is filled, and the verb itself has moved to the Pred head, then the specifier material will bear phrasal stress (as described in Note 2). If the designated argument has raised from Spec,PredP, then it is still possible to render the stress avoiding verb unstressed, by raising a light verbal modifier (selected by the stress avoiding verb) and incorporating it into the verb. Within the complex head, it will then be the verbal modifier rather than the verb that is stressed. If the option of incorporating a verbal modifier is not viable, then the verb will be stressed in a neutral sentence – for no other PredP is available to accommodate another 'designated argument'. Thus the stress avoiding verb is unstressed whenever it is possible, but if all else fails, then it will surface with phrasal stress.

A similar account can be proposed for phonologically deficient auxiliaries. Theoretically, they can also appear with a phrasal stress in a neutral sentence. However, for an auxiliary it is always possible to have a head that incorporates into the auxiliary, even if no verbal modifier is present. That head is the lowest infinitive, which raises to adjoin to the matrix auxiliary:

- (54) *Énekelni fog akarni t_{énekelni} János.*
 sing-INF will-3SG want-INF J-NOM
 ‘János will want to sing.’

Stress-avoiding verbs (as their name suggests) and auxiliaries then share the property of evading phrasal stress whenever possible. This preference can be overridden in the case of almost all such verbs when they are focused or preceded by a covert operator EXIST or PROG. In neutral sentences, there is always a strategy to ensure that the auxiliary will not be stressed – if no verbal modifier is present, then the lowest auxiliary will climb to receive the stress of the matrix auxiliary. For stress-avoiding verbs, this is not always possible: in certain environments, such as (53), they do appear stressed. The no-stress preference can be tied to the fact that both auxiliaries and stress-avoiding verbs are either close to being semantically vacuous, or fail to assign a thematic role (É. Kiss p.c.). The majority of stress-avoiding verbs express existence or coming into existence, and so their stress-avoiding preference can be tied to the cliticization of verbs of existence in other languages, such as English. Auxiliaries assign no thematic role on their own: again, their prosodic dependence is also manifest, among other languages, in English, where they tend to cliticize, and in Bantu languages, where they are expressed as suffixes.

I suggested that the behavior of genuine verbal modifiers with stress avoiding verbs cannot be described by assimilating nonfinite stress avoiding verb constructions to focus constructions. In nonfinite focus constructions – whether involving a stress avoiding or a non-stress avoiding verb – the verbal modifier can be optionally stranded by the infinitive if the clause contains a focused constituent. In a neutral nonfinite clause, the verbal modifier must immediately precede the infinitive if the designated argument has been pied-piped up, and no optionality is allowed. In order to account for this pattern, I suggested completely divorcing the treatment of neutral nonfinite clauses from non-neutral ones. I suggested that the relevant property of stress avoiding verbs is their preference for not being stressed; whenever it is possible for some other element to bear the phrasal stress of the verb, it will do so. Once the designated argument is moved from Spec,PredP, the verbal modifier is still free to re-incorporate into the verbal head to attract stress. If there is no verbal modifier in the clause, no phrase can appear in the appropriate stress-attracting configuration with the stress avoiding verb, since PredP is non-recursive.

6. Summary

Given the independently motivated distinction between head and phrasal particles in Dutch, I suggested that a similar treatment is possible for Hungarian verbal modifiers. Dutch particles and Hungarian verbal modifiers must all move to the specifier position of PredP for licensing purposes. Those particles and verbal modifiers that have only head material may also incorporate into the verb. To account for the attested patterns, certain differences were also allowed with respect to the position and other properties of PredP. In Dutch, PredP is only available dominating the finite auxiliary in a verbal complex, it can be iterated, and it may not house strong NPs. For Hungarian, I suggested that PredP is also possible on top of the lexical verb that selects the verbal modifier as well as on top of the highest auxiliary; that PredP cannot be iterated, and that there is no restriction on the NPs that may move to PredP.

Next, I considered the class of Pred verbs, originally dubbed ‘stress-avoiding verbs’ by Komlósy (1992). I argued, based on interpretational and distributional facts, that designated arguments cannot be assimilated to foci. Rather, designated arguments should be seen as a class of verbal modifiers, since the differences between the behaviors of prototypical designated arguments and usual verbal modifiers can be reduced to the fact whether the relevant item is phrasal.

Finally, I considered the behavior of head verbal modifiers in stress avoiding verbs. In neutral finite clauses, these verbal modifiers appear to the right of the verb, while in a neutral clause where the designated argument has been moved to a higher clause, they precede the verb. For this pattern, I suggested an account that made use of the preference of stress avoiding verbs not to be stressed. In both cases the verb exorporated from a complex head, stranding the verbal modifier. However, once the designated argument has moved out, the stress avoiding verb would have been assigned phrasal stress. Whenever it is possible for some element other than the designated argument to attract stress from the verb, it does so – thus the verbal modifier re-incorporates into the verb.

The analysis put forth in this paper not only adopts the treatment of Dutch particles into Hungarian. It also helps to do away with an independent class of predicates, by assimilating stress avoiding verbs to auxiliaries, and their designated arguments to verbal modifiers. It is not necessary to design specific mechanism that describe their distribution, for these are also handled by the mechanisms defined for auxiliaries and verbal modifiers.

Notes

* I would like to acknowledge the help of the organizers and participants of the workshops on verbal clusters within the Dutch–Hungarian Study Center (under the Third Memorandum of Understanding of NIAS), and especially that of Huba Bartos, Michael Brody, Katalin É. Kiss, and Csaba Olsvay.

1. In this paper I will only discuss those auxiliaries that trigger restructuring in Germanic and in Hungarian (particle climbing or roll-up). Thus under the term *auxiliary* I only include these kinds of verbs in the paper, and the descriptions are not meant to hold for all auxiliaries within the language under discussion. For a description and classification of auxiliaries, the reader is referred to Kálmán et al. (1989).

2. I assume that within any XP, the specifier of the phrase will be assigned phrasal stress, and the head X can receive at most phrasal stress. This assumption will have the desired effect that in a PredP, it will be the heavy VM that will be stressed instead of the verb in Pred.

3. Based on the description of Komlósy (1992), I will propose a criterion to identify Pred verbs in the next section.

4. The suffix *-ra/-re* can be shown to be a case ending and not a postposition by the fact that the DP cannot appear with a dative case ending, unlike the complements of postpositions (Marác 1984):

- (i) **János-nak-ra*_C / **János-nak-rá*_{jaC} (case ending)
 J-DAT-ON / J-DAT-ON-3SG
 ‘on János’
- (ii) *János-nak mögött*_{P-e} (postposition)
 J-DAT behind-3SG
 ‘behind János’

5. Since the covert operators are phonologically empty, they cannot be recovered if they are stranded; thus they do not exhibit this property.

6. For an exception from this generalization and its account, see Section 5.

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Climbing for aspect

With no rucksack

Gábor Alberti

1. Introduction

1.1 Connection between verb clusters and aspect in Hungarian

Brody (1997), Koopman and Szabolcsi (1998) and É. Kiss (1998b) identified a puzzle of word order patterns in Hungarian verb clusters. It is due to their work that the syntax of verbal clusters became a “hot topic” in Hungarian syntax. This paper is devoted to this puzzle.¹ (1) and (2) below illustrate the basic group of relevant data:

- (1) a. *Szét fogom akarni szedni a rádiót.*
away will-1SG want-INF take-INF the radio-ACC
‘I will want to take apart the radio.’
b. **Szétszedni fogom akarni a rádiót.* (in the neutral sense above)
c. **Szétszedni akarni fogom a rádiót.* (in the neutral sense above)
- (2) a. **/???ÉN fogom szét akarni szedni a rádiót.*
I will-1SG away want-INF take-INF the radio-ACC
b. *?ÉN fogom akarni szétszedni a rádiót.*
c. *??ÉN fogom szétszedni akarni a rádiót.*
intended meaning in (a–c): ‘It is me that will want to take apart the radio.’

The sentences in (2) involve a focus, indicated by capitals. The explanation for the word order pattern based on *aspectualizers* (Piñón 1995; É. Kiss 1998a) proposed here was inspired by the “(full) roll-up” version of sentences with a focus, illustrated in (2c). Here *szét* ‘apart’ belongs to *szedni* ‘take-INF’ as it is its aspectualizer. While the two together, *szét-szedni* ‘apart-take-INF’ form the aspectualizer of the verb *akarni* ‘want-INF’. In turn, the sequence *szétszedni–akarni* ‘apart–take-INF–want-INF’ serves as the aspectualizer of the finite auxiliary *fogom* ‘will-1SG’. So

the derivation of the final sequence in (2c), goes as follows. The initial sequence, [*fogom* ... [*akarni* ... [*szedniszét* ...]]] ‘will-1SG want-INF take-INF apart’ is first replaced with a constituent with a *szét-szedni* unit, which happens to be the aspectualizer of *akarni* ‘want-INF’; we thus obtain the *szétszedni-akarni* ‘apart-take-INF-want-INF’ construction. This latter one will occupy the AspP-specifier position of the main clause, whose head position Asp accommodates the finite auxiliary *fogom* ‘will-1SG’ (*szétszedni-akarni-fogom*: “roll-up construction”), which (the auxiliary) is to be obligatorily incorporated in the focus head finally (Brody 1990; É. Kiss 1998b).

My entire proposal (Alberti 1999, 2000) rests on the idea that the neutral word order version in (1a), which seems to have a quite different structure (containing a “climbing preverb”), should be derived in the same way, based on moving aspectualizers.² What is to be proven is that the “climbing” preverb *szét* ‘apart’ is not only the aspectualizer of the predicate *szedni* ‘take-inf’ but, in addition, fulfilling this role allows it to serve as the “representative” of the aspectualizer of the predicate *akarni* ‘want-INF’ as well. Furthermore, due to this latter function, it can also perform the task of being the representative of the aspectualizer of the finite predicate *fogom* ‘will-1SG’.

(3a–b) below illustrate (a very simplified description of) this analysis.

- (3) a. *Fel_i akarok t_i mászni t_i a fára.*
 up want-1SG climb-INF the tree-onto
 ‘I want to climb up the tree.’
- b. *Utálok fel_i-mászni t_i a fára.*
 hate-1SG up-climb-INF the tree-onto
 ‘I hate climbing up the tree.’
- c. *Mászni_i akarok (éppen) t_i fel a fára, amikor*
 climb-INF want-1SG just up the tree-onto when
megjön Samu bácsi.
 PERF-come Sam uncle
 ‘I want to be in the state of climbing up the tree when uncle Sam comes.’
- d. *Utálok (éppen) mászni fel a fára, amikor*
 hate-1SG just climb-INF up the tree-onto when
megjön Samu bácsi.
 PERF-come Sam uncle
 ‘I hate being in the state of climbing up the tree when uncle Sam comes.’

Note that (3c–d), containing sentences with progressive InfPs, provide a new set of data in support of the approach based on moving aspectualizers proposed here. In

(3c), as the reader will shortly see, *mászni* ‘climb-INF’ serves as its own aspectualizer in its (progressive) infinitival phrase; that is why it is *mászni* ‘climb-INF’ that fulfills the “representative” role normally performed by the preverb (e.g. in (3a)).

It is Section 3 that will be devoted to a detailed introduction and discussion of the analyses sketched so far: the neutral type (1a) is dealt with in Section 3.1, while Section 3.2 is concerned with the focused type (2c). These two sentence types – the neutral one with a climbing preverb and the “full roll-up” construction – are considered to be the two basic types in my theory of Hungarian verb clusters in the sense that further word-order variants (of different degrees of grammaticality) are to be derived from these (see Section 4).

The earlier Section 2 introduces the reader to technical details of the theory of Hungarian aspect applied in this paper. A separate section (2.3) is devoted to the discussion of the aspectual difference between *akar* ‘want’ and *utál* ‘hate’ whose impact on word order is clearly illustrated by (3a, c) versus (3b, d).

But first, let us start with a brief discussion of a theory of syntactic expression of aspect in Hungarian.

1.2 A theory of aspect in Hungarian based on “climbing aspectualizers”

Kiefer (1992b:802) defines a “pure aspect language” as a language where aspectual categories “appear (exclusively) in the morphology of verbs”. I argue that Hungarian is not a pure aspect language. Rather, aspectual categories are expressed partly by syntactic means. However, aspectual categories do not take the shape of explicit systems of auxiliaries, characteristic of some Germanic languages. Instead, they emerge in the form of peculiar phonological–syntactic procedures concerning word order, in which preverbs (and (other) verbal modifiers) play a central role. The widely accepted basic generalization is that the preverb–verb order, illustrated in (4a) below, typically ensures perfective aspect, in contrast with the typically continuous (and more precisely, progressive) verb–preverb order (4b) (Kiefer 1992a:859; É. Kiss 1992:124):³

- (4) a. *Felmászom a fára.*
 up-climb-1SG the tree-onto
 ‘I climb up the tree.’
 b. *Mászom fel a fára.*
 climb-1SG up the tree-onto
 ‘I am climbing up the tree.’

This is not to say that this generalization holds in all cases of verb-particle combinations. (5a–b) illustrate the problematic case where the position of the preverb before the verb does not always ensure a perfective reading. Neither does the un-

filled VP-specifier necessarily amount to continuous aspect: *telefonál* ‘phone’ is aspectually ambiguous, (5c); whereas *int* ‘wave’ is perfective, (5d) (as it is instantaneous). The generalization does not fully extend to the (larger) category of verbal modifiers either. In certain cases, the modifier–verb order, parallel to the preverb–verb order, provides the perfective aspect, while the verb–modifier order, parallel to the verb–preverb order, gives continuous aspect, as for instance in (5e), with ‘paint green’. But the opposite case can also be observed. Kiefer (1992b:842) regards the *mosott kezét* ‘washed hand’ verb–modifier order as being perfective. At the same time, he claims that the *kezet mos* ‘hand wash’ modifier–verb order can express continuity, witnessed by the temporal adjunct in (5f). Finally, as the neutral intonation of (5g) exemplifies, there are cases, although admittedly few, where it is not the preverb that occupies the preverbal VP-specifier position but rather the argument with a location role (*a folyóparton* ‘on the river bank’).

- (5) a. *Péter három órán át fel-olvasott.*
 Peter three hour-onto through up-read
 ‘Peter was reading out three hours.’
- b. *Egy ideig el-borozgattak.* (Kiefer 1992b:830)
 one time-TERM away-drunk-wine-3PL
 ‘They were drinking wine for a while.’
- c. *Még mindig telefonál. / Már telefonált.* (Kiefer 1992b:833)
 still always phone / already phoned
 ‘He is still phoning.’ / ‘He has already phoned.’
- d. *Mari intett Péternek.*
 Mary waved Peter-DAT
 ‘Mary waved to Peter.’
- e. *Éppen festettem zöldre a kerítést. / Zöldre festettem a kerítést.*
 just painted-1SG green-onto the fence-ACC / green-onto painted-1SG the fence-ACC
 ‘I was just painting the fence green.’ / ‘I (have) painted the fence green.’
- f. *Tíz perce kezét mos. / Mosott kezét.*
 ten minute-3SG hand-ACC wash / washed hand-ACC
 ‘He has been washing his hands for ten minutes.’ / ‘He (has) washed his hands.’ (Kiefer 1992b:842)
- g. *Az új városrész a folyóparton terül el.* (Komlósy 1992)
 the new city-part the river-bank-on lie away
 ‘The new part of the city lies on the two sides of the river.’

Note that the examples in (3) are also worth mentioning here. They describe states where the progressive–perfective opposition is not interpreted. Nevertheless, it is

interesting to see that certain verbs require the preverb–verb order, even at the cost of triggering movement of a preverb that lexically belongs to a lower predicate (3a), while other verbs prefer the order with the finite verb in the initial position of the VP (3c–d).

The incorporation of XPs projected by functional operator heads bearing some semantic content but no phonetic form from cross-linguistic research into Hungarian generative linguistics, initiated by Brody's (1990) FP focus projection and applied further, for instance, by É. Kiss (1998a–b) and Alberti (1997) has promised a general solution to the problems discussed above. The compatible proposal has obviously been to say that what is responsible for aspectual marking is an Aspectual operator head with the central VP core of the Hungarian sentence in its complement.⁴ Piñón (1995) puts forward such a theory concerning the basic cases.⁵ His proposal is adopted and adapted also in this paper, the essential point being that each verb has one of its arguments distinguished from the other arguments as the 'aspectualizer'. This argument is to express a certain (not necessarily perfective) aspectual value, through occupying the AspP-specifier position.

Let us now turn to the discussion of the Aspectual Projection.

2. Aspectual Projection

2.1 AspP and/or Referentiality Constraint?

As was mentioned in the Introduction, I would like to generalize É. Kiss's (1998a) syntactic treatment of Hungarian aspect based on Piñón's (1995) proposals to the case of verbal clusters. The specific proposal is put forward in (6) below.

- (6) **ASP:** The VP of the Hungarian sentence (with a finite V as its head) and the InfP (with an infinitive verb as its head) (obligatorily) occupy a position in the complement of an Aspectual Projection (AspP; or Asp_{Inf}P in the latter case). The aspectual value of the VP/InfP – determined by the lexical characterization of the V/Inf predicate – is to be assigned to one of the arguments or the head itself in the form of an appropriate feature. The holder of this feature is called the *aspectualizer*.

ASPM: In order to check this feature, the aspectualizer is to move into the aspectual domain, which consists of the Asp head and the specifier of Asp. V/Inf moves to the Asp head, while an XP argument moves to the AspP-specifier, because of categorial compatibility.

ASPM': The finite verb incorporates obligatorily into the Asp head (presumably in order to check the tense feature).⁶

In (7), I illustrate the application of the ASP rules in (6) by spelling out the relevant syntactic properties of the example pair in (4) from Section 1.2 (see (4) for glosses).

- (7) a. $[_{\text{AspP}} \text{Fel}_j [_{\text{Asp}} \text{mászom}_i [_{\text{VP}=\text{V}} \text{t}_i \text{t}_j \text{pro } a \text{ fára}]]]$.
 b. $[_{\text{AspP}=\text{Asp}} \text{Mászom}_i [_{\text{VP}} \text{fel}_j [_{\text{V}} \text{t}_i \text{t}_j \text{pro } a \text{ fára}]]]$.

The analysis relies on the assumption that the lexical characterization of *fel*–*mászik* ‘climb up’ is lexically underspecified in a certain respect: either the preverb *fel* ‘up’ plays the role of the aspectualizer with the help of a feature expressing perfectivity, or the verb *mászik* itself serves as the aspectualizer with the help of a progressive feature. The ASPM in (6) requires that the preverb moves up to the AspP-specifier in the former case (7a), whereas in the latter case, the effect of ASPM is that the verbal head incorporates into the Asp head (7b). Given ASPM’, which necessitates the incorporation of the finite verb into the Asp head, verb movement to Asp is carried out in both (7a) and (7b), as they both involve finite verbs. In other words, in the case of (7b), the effects of the movement rules ASPM and ASPM’ coincide.

The lexical specifications of predicates that are responsible for determining the aspectualizers and their aspectual values will be discussed thoroughly in Section 2.2. Now let us concentrate on the precise syntactic analysis adopted here. Take (7b), where the preverb is supposed to initially appear as a sister to the verb under V’, thereby precisely following É. Kiss’s “standard” 1992 approach. Here, I claim that the preverb moves at least up to the VP-specifier position even though the word order in (7b) supplies no direct evidence for this analysis since the verb occupying the Asp position, which precedes the VP-specifier, masks the effect of this movement operation. The real question behind the issue illustrated by the analysis of (7b) concerns the legitimacy of the proposed aspectual shell: is not the VP-specifier position sufficient for providing a syntactic position for aspectualizers (cf. É. Kiss 1992)?

In what follows I would like to provide some indirect evidence as a counterpart of Piñón’s (1995) and É. Kiss’s (1998a) arguments in support of the introduction of a separate AspP shell, arguing that the specifier position of the VP has no aspectual function. In this I maintain an earlier proposal of mine (Alberti 1997) termed the *Referentiality Principle*, which states that the specifier position belonging to the V/Inf head serves as a “shelter” for preverbs forced to leave their original complement positions because of their non-referential nature. The precise formulation of the principle is given below.

- (8) **REF:** Verbs (and other predicative heads) require their arguments appearing in complement positions of the VP (XP) projection to be referential. This requirement concerning referentiality can be neutralized by specifier positions of a certain group of projections (in a neutral sentence the VP-specifier itself and the AspP-specifier have this neutralizing effect, whereas

otherwise the neutralizing specifier positions are those that belong to a focus, a quantifier or a contrastive topic head).

The Referentiality Principle is based on the hypothesis that complement positions, sisters of the head, are predetermined to accommodate subcategorized arguments, and that arguments should typically “refer” whilst predicating is the genuine task of the head. This being the typical case, this is not to say it is the only case allowed in natural language. For instance, the appearance of predicative (non-referential) arguments (see e.g. Komlósy 1992) indicate that (the semantics of) languages go beyond this basic formula. In Hungarian, the syntax of the language reflects the basic formula by adhering to some form of a referentiality constraint on complements.

I illustrate this by the examples in (9a–b) below. Here no referent is assigned to the argument in the neutral reading. As a result they cannot occupy the complement position in the VP, as this position is reserved for referential arguments, by REF. In contrast, in the AspP-specifier in (9c), and in specifier positions of certain operator projections in (9d), the REF constraint is neutralized, and arguments are permitted to appear in non-referential (predicative) form.

- (9) a. *Született* *(*egy*) *fiú*. (in a neutral sense)
 was-born a boy
 ‘A boy was born.’
- b. *Táncoltam* *(*egy*) *molett lánnyal*. (in a neutral sense)
 danced-1sg a plump girl-with
 ‘I danced with a plump girl.’
- c. [_{AspP} *Fiú_i született_t* [_{VP} ...]].
 boy was-born
 ‘A boy (or perhaps more boys) was (were) born.’
- d. [_{C_{Top}/FP} *Molett lánnyal_i táncoltam_t* ...]. / [_{QP} *Molett*
 plump girl-with danced-1sg plump
lánnyal_i is táncoltam_t...].
 girl-with also danced-1sg
 C_{Top}: ‘As for the type of plump girls, I danced with one or more of them.’
 FP: ‘I danced with one or more PLUMP GIRLS.’
 QP: ‘I danced with one or more plump girls, too.’

One might think that, as non-referential arguments are typically aspectualizers ((4a), (5a, b, e, f)), the REF Principle – at least in its general form given in (8) – is superfluous, because the hypothesis that states that aspectualizers of a predicate occupy a designated syntactic position, the specifier of AspP, is in itself sufficient to account for the word order characteristics found in these cases. In other words, there is no need to assume that non-referential arguments occupy this position

in order to “escape” the REF principle, as their displacement is justified by the necessity to satisfy the ASP rules in (6).

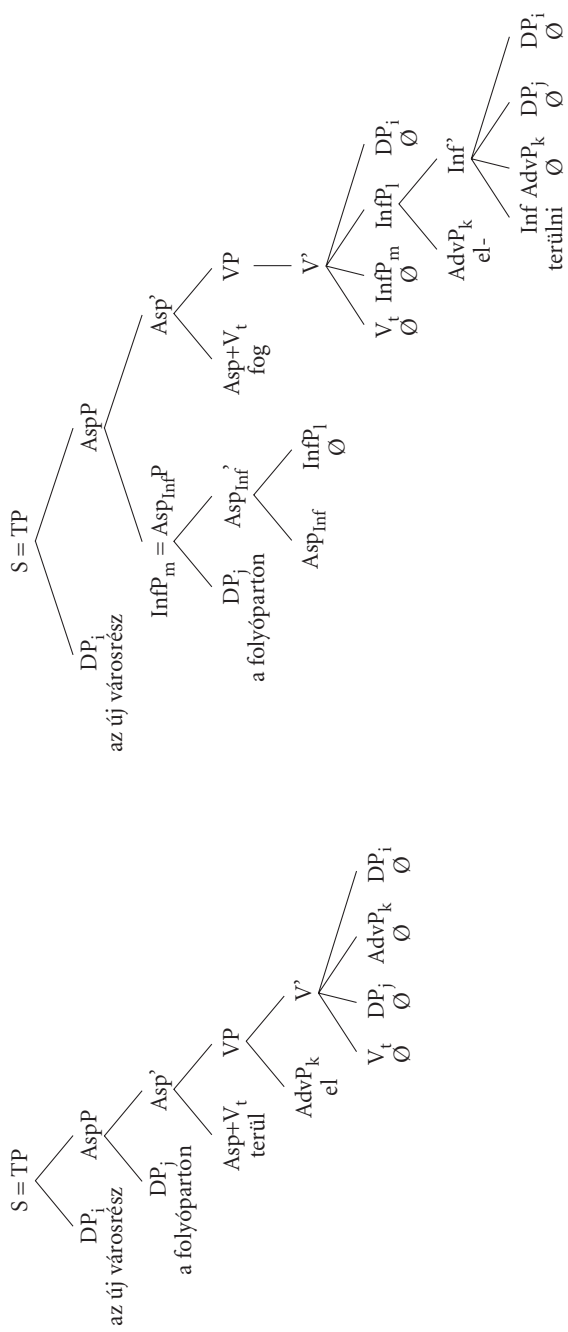
The evidence in support of the independent legitimacy of REF (8), and in support of the introduction of the AspP layer above the VP/InfP constituent as an autonomous structural shell, is illustrated by the example in (10b) below. In order to provide the reader with a clear description of the derivation of (10b), I first provide an analysis of the simpler case in (10a) (detailed structural representation is available in Figure 1).

- (10) a. *Az új városrész_i [AspP a folyóparton_j [Asp⁺ terület_t
the new city-part the river-bank-on lie
[VP el_{k?} [V⁺ ...]]].* = (5g)
away
‘The new part of the city will be situated on the two sides of the river.’
- b. *Az új városrész a folyóparton fog [InfP el_{k?} [Inf⁺ területni ...]].*
the new city-part the river-bank-on will away lie-INF
‘The new part of the city will be situated on the two sides of the river.’

The exceptional nature of the lexical item *el-terül valahol* (away-lie somewhere) ‘be situated somewhere’ materializes in the fact that it is not the preverb that is selected to function as the aspectualizer. As the preverb *el* ‘away’ carries a dynamic element of the semantic content of the predicate, it is rather the argument with the *location* thematic role (‘on the river bank’) that the stative aspectual value is associated with (see below). Thus the surface structure in (10a) (see also Figure 1) is derived as follows: the aspectualizer in question moves to the AspP-specifier due to ASPM; the finite verb incorporates into the Asp head (due to ASPM’); and finally, the (non-referential) preverb moves to the VP-specifier to neutralize the effects of REF. Similarly to the case of (7b), this analysis proposed for (10a) can neither be verified nor disproved on the basis of the surface word order.

Let us consider (10b), however. The finite auxiliary *fog* ‘will’ takes an argument of the category InfP, responsible for referring to situations (InfP_m in Figure 1), which itself projects an aspectual shell, due to ASP. The aspectual shell of InfP is denoted by Asp_{InfP}, referring to the fact that this aspectual shell belongs to the InfP, rather than to the finite V. The location argument of the lexical item *el-terül* ‘away-lie-INF’ occupies the specifier position of Asp_{InfP}, along the lines of the example in (10a). Since *terül* ‘lie-INF’, the Inf head, is non-finite, it does not fall under the realm of ASPM’, and thus it is not necessary for it to move to the Asp_{InfP} head. Given the minimalist philosophy, this incorporation is practically forbidden.

The word order in (10b) suggests that the aspectualizer of *fog* ‘will’ is its InfP_m argument. This argument should thus occupy the upper AspP-specifier. As it will be thoroughly discussed in Section 2.3, certain phonological restrictions require



(5g) = (10a) *Az új városrész a folyóparton terül el.*
'the new city-part the river-bank-on lie away'

(10b) *Az új városrész a folyóparton fog elterülni.*
'the new city-part the river-bank-on will away-lie-INF'

Figure 1.

that the unstressed verb incorporated in the aspectual head can only be preceded in the AspP-specifier by a stressed expression that is roughly word-size. Thus, the whole InfP_m can enter the AspP-specifier only as a remnant: the internal InfP₁ “core” dominated by the Asp_{InfP} shell has to be extraposed to the structural level of the finite verb.⁷ Thus, we constructed the sequence *a folyóparton fog* ‘the river-bank-on will’ (AspP-specifier + Asp head) with one stressed syllable, and we have carried out the demanded ASPM movement in the case of both the finite verb *fog* and the Inf head *terülni*. As it is shown in the structural representation in Figure 1, the finite verb incorporates into the Asp head (due to ASPM’).

What would be obtained on the basis of all those derivational steps mentioned so far, however, is the incorrect word order in (10c):

- (10) c. *Az új városrész a folyóparton fog terülni el.
the new city-part the river-bank-on will lie-INF away

The position of the preverb *el* ‘away’ in (10b) can be accounted for by the REF Principle: it occupies the InfP-specifier, in order to escape being in the complement position of the Inf head. Let us observe further that the word order in (10b) (vs. (10c)) also provides evidence for a certain aspect of the ASP rule: the non-finite predicate must not be required to be incorporated into the aspectual head belonging to it (since an analysis like this would also result in the incorrect word order of (10c)).⁸

2.2 What will make a good aspectualizer?

We are going to argue that the ASP theory put forward in (6) above provides a simple systematization of the syntactic side of the Hungarian aspectual problems. The apparent chaotic heterogeneity exemplified by (3)–(5) is to be regarded chiefly as the result of lexical-semantic variation in the sense whether the predicate itself serves as an aspectualizer, or one of its arguments does. Taking into consideration even the internal syntactic structure of the arguments concerned and the morphology of the predicate (Kiefer 1992b), what kind of aspectual value can each carry? The gist of the present proposal is that the same aspectual shell accommodates this wide variety of lexical specifications.

Let us review the basic cases sketched in the Introduction on the basis of Table 1 below.

In the case of *fel-mászik* ‘up-climb’ two potential aspectualizers are mentioned in the lexical characterization, so this lexical item can serve as the finite verb of sentences with two kinds of aspect. Following Kamp and Reyle’s (1993) discussion on actions with a goal argument, we regard the verb *mászik* ‘climb’ itself as the expression of a permanently maintainable activity. Therefore, if it gets the aspec-

Table 1. Aspectualizers and aspectual values

	V		InfP / AdvP / DP / NP	
	aspectualizer?	asp. value	aspectualizer?	asp.value/rem.
(4) <i>fel-mászik</i> 'up-climb'	✓	prog.	✓ (AdvP)	perf. (∅: goal)
(5a) <i>fel-olvas</i> 'up-read'	???	prog.???	✓ (AdvP)	cont.
(5b) <i>el-borozgat</i> 'away-drink-wine'	*		✓ (AdvP)	cont.
(5c) <i>telefonál</i> 'telephone'	✓	cont./perf.		
(5d) <i>int</i> 'wave'	✓	perf.		
(5e) <i>zöldre_{AP} fest vmit_(NP)</i> 'green-onto paint sth.'	✓	prog.	✓ (AP) ✓ (NP)	AP: perf. (∅: goal) NP _{acc} : cont.?
(5f) <i>kezet mos</i> 'hand-acc wash'	✓	perf.?	✓ (NP)	cont.
(5g), (10a) <i>vhol terül (el)</i> 'sw. lie away'	*		✓ (DP)	state (∅: loc.)
<i>el-terül</i> 'away-lie', <i>fel-ébred</i> 'up-wake'	??	cont.??	✓ (AdvP)	perf.
(3a, c) <i>InfP akar</i> 'want' (and (1a), (10b) <i>fog</i> 'will')	??	??	✓ (InfP)	state (∅: goal)
(3b, d) <i>utál InfP</i> 'hate'	✓	state	*	(∅: stimulus)

tualizer role, the sentence obviously obtains the continuous (progressive) aspect. The preverb *fel* 'up', however, refers to the goal (it may even belong to the goal argument). Reaching this goal amounts to the accomplishment of a telic action – thus it is not surprising that in the aspectualizer role, *fel* 'up' is associated with a perfective reading.

In contrast, in the expression *fel-olvas* 'up-read', the preverb *fel* does not refer to a goal, rather the meaning element corresponding to it is roughly *aloud*, a manner (permanently) concomitant to the activity of reading. We are thus forced to rely on the assumption concerning the lexicon that in this case the preverb *fel* 'up' as an aspectualizer is associated with a continuous aspectual feature. This assignment is odd from a semantic viewpoint but its contribution to syntactic structure is not surprising. The expression *el-borozgat* 'away-drink-wine' behaves in the same way. Only the preverb can function as an aspectualizer. It carries continuous aspectual value, due to the fact that *el* 'away' does not refer to a spatial change here. Rather, it expresses the long-lasting, comfortable activity of drinking wine.

As for the verb *telefonál* 'phone', I follow Kiefer (1992b:833) in assuming that the continuous reading and the perfective reading belong to one and the same lexical item. In this approach, the verb itself should be assumed to act as the aspectualizer in both cases, permitting the assignment of two aspectual features to it. The syntactic effect of the phenomenon provides nothing special here either: the

principle of categorial uniformity determines that the verb (independently of its aspectualizer function) should move to the Asp head in any case.

The instantaneous verb *int* ‘wave’, which comes with no preverb, cannot be associated with a continuous aspect because of semantic reasons. Thus in this case, too, the verb should serve as an aspectualizer but only with a perfective aspectual value.

Zöldre fest ‘green-onto paint’ contains a (case-marked) predicative verbal modifier of the category AP, instead of a preverb. Its aspectual behavior, nevertheless, is entirely the same as that of *fel-mászik*, as is shown in Table 1 above: either the verbal modifier with a goal thematic role (Komlósy 1992) fulfills the task of the aspectualizer – resulting in a perfective aspectual reading, or the verb itself can serve as its own aspectualizer – in which case it is associated with a continuous (progressive) aspectual value. It is worth mentioning here that another type of continuous aspect can be expressed, too, in such a way that the aspectualizer role is assigned to a bare plural object (the sentence below is intended to be uttered with a uniform, neutral intonation pattern):

- (11) *’Egész ’hétvégén ’kerítéseket festettünk ’zöldre.*
 whole weekend fences-ACC painted-1PL green-onto
 ‘The whole weekend we were painting fences green.’

Just the opposite aspectual behavior is reported by Kiefer (1992b:842), however, in the case of the expression *kezet mos* ‘hand-ACC wash’, which also contains a verbal modifier. When it serves as an aspectualizer, this verbal modifier, can be associated with a continuous aspectual value while the perfectivity of *mosott kezet* ‘washed hand-ACC’ is to be attributed to the verb playing the aspectualizer role.

It is also worth emphasizing in connection with the last two examples that the opposite aspectual behaviors of (5e) and (5f) require no distinct syntactic treatment, as the difference can be derived from a difference between the lexical specifications.

Now, the expression *valahol terül el* ‘somewhere lie away’, which was discussed in Section 2.1 as well, can be regarded as exceptional only in respect of its lexical make-up: its aspectualizer happens not to be the preverb but the location argument – in total harmony with the fact that the aspectual value of the predicate is *state*. To compare, Table 1 includes the verb *el-terül* ‘away-lie’, whose meaning is ‘lie flat’. This is a typical instantaneous verb, similar to *fel-ébred* ‘up-wake’ (*wake up*). Here the aspectualizer role is played by the preverb ‘away’, which carries a dynamic element of meaning and is concomitantly assigned a perfective aspectual value.

Finally, let us turn to the detailed syntactic analyses of *akar* ‘want’ and *utál* ‘hate’, which are representatives of the two aspectual types of predicates that take InfP arguments in the chart.

Sentence (12b) is undoubtedly characterized by a peripheral use and it is not at all easy to evaluate the status of its grammaticality. Many might consider it to be ungrammatical at first sight. I definitely claim, however, that it is grammatical, and what its peripheral use indicates is not grammatical ill-formedness but a straightforward consequence of the strange nature or low frequency of the occurrence of the situation described by it. However, if one constructs an appropriately elaborate interpretation, it shines through that this can be expressed by means of exactly the predicted sentence type (aspectualizer of the category InfP + finite verb).

Sentence (12b), for instance, may describe a situation in which Sam is a rich uncle who is fond of wild boys that like climbing trees and he is delighted by the mere sight of them climbing a tree to the extent that he would wish to reward his young relative. Therefore the boy is interested in being in the middle of climbing a tree at the moment of the uncle's arrival. The situation described by the sentence in (12d) is in a certain sense just the opposite of the former situation: here the uncle does not consider climbing trees to be an honorable habit, so the speaker, who presumably likes climbing trees, intends to express that it is not favorable for him to be noticed by the uncle in the middle of climbing up a tree. What is common in the two sentences in (12b) and (12d) is that the speaker expresses an emotion aimed at an ongoing action. Moreover, it can be firmly stated that the emotion aims at the given action's being in progress.

Thus the difference in aspectual behavior between *utál* 'hate' and *akar* 'want' lies in the fact that the aspectualizer of the former is itself, whereas the aspectualizer of the latter is its InfP argument, which, however, will not move to the AspP-specifier as a whole, because of phonological reasons to be discussed promptly. We can try to take the explanation of the difference in the selection of aspectualizers one step further by referring to thematic roles. Insofar as the InfP argument of 'want' is regarded as a goal, while that of 'hate' is regarded as a stimulus, 'want' can be taken to be similar to *fel-olvas* 'up-read' in the relevant sense: the goal argument will fulfill the aspectualizer function (see Table 1). Unfortunately, thematic categorization is not a completely exact and precise procedure (Komlósy 1992), so what our explanation says is not significantly more than saying that there is a (syntactically) relevant semantic difference between 'want' and 'hate': the state of 'wanting' is lexically associated with the potential appearance of the situation described by the InfP as a phase that follows the wanting-state, while the state of 'hating' advances towards no subsequent situation.

Let us return to the question of preverbs functioning as representatives of bigger phrases ((12), (13a)). Although the term *phonological word* as used by É. Kiss (1992: 100) is not widely accepted, here we would like to apply it to the sequence of the phonetic material in the AspP-specifier (typically preverb or verbal modifier) and the following verb, the crucial feature being that this unit has a unique stress on the initial syllable. (Word-stress in general is initial in Hungarian.) The constraint

below declares this property by saying that the given unit essentially functions as a single word (a compound-like one).

- (14) **PHON:** $*[_{\text{AspP}} \text{InfP}_j [_{\text{Asp}} X_k \text{ head } \dots]]$ if the phonetic form that belongs to the InfP (with index j above) contains more phonological material than a head (practically $X = V$).

It is easy to see that this is impossible if the InfP in the syntactic formula in (14) is a proper (non-remnant) phrase, i.e. it contains more phonological material than a phonetically realized head. The reason for this may lie in the desire of Hungarian (or languages in general) to express tense and aspect within a single essentially word-size unit, which can be achieved by attaching the tense suffix onto the verb stem and by making sure that the aspectual feature is carried by subcategorized arguments.

Thus, the ungrammaticality of examples (13a–b) (as neutral sentences) can be attributed to the violation of the PHON constraint.⁹ The grammatical status of examples (12a–b) can be accounted for in the (essentially) minimalist framework which forms the theoretical background of this paper (Chomsky 1995; Brody 1997; É. Kiss 1998b; Koopman & Szabolcsi 1998; Alberti 1999, 2000), in the following way. One may claim that those derivations in which InfPs attracted to the AspP -specifier because of aspectual reasons *do* move there as a whole will crash at the syntax–phonology interface. As a result, those computations in which the major part of the phonological material is extraposed from the InfPs in question at the cost of an additional move operation (or “spelt out” in an earlier phase of computation) may become optimal. Technical details are available in Figure 2 and briefly commented on here.

The common feature of (12a) and (12b) is that the verbal head *akarok* ‘want-I’ gets incorporated into the Asp head (ASPM'). In addition, the InfP_k argument, base-generated as a sister node of the finite V , moves to the AspP -specifier of the main clause (ASPM (6)). However, this latter operation can only be carried out in the course of a computation in which the inner InfP_m is extraposed to the level of the main clause (or spelt out before the move operation takes place), because of the PHON constraint (14). As for the difference between (12a) and (12b), it lies in the content of the aspectual shell of the moving InfP_m . In harmony with the semantic difference between the two kinds of infinitival aspects, in the former case (12a), the preverb *fel* ‘up’ can be found in the Asp_{InfP} -shell (obviously in the specifier position), whereas in the latter case, the infinitival predicate *mászni* ‘climb-INF’ can be found there (it occupies the Asp_{Inf} head). It is to be noted that the PHON constraint is satisfied also in the former case as the preverb – in spite of its being an argumental phrase – contains only head-size phonological material, which is not an accident at all since that is why the preverb is suitable for serving as an aspectualizer

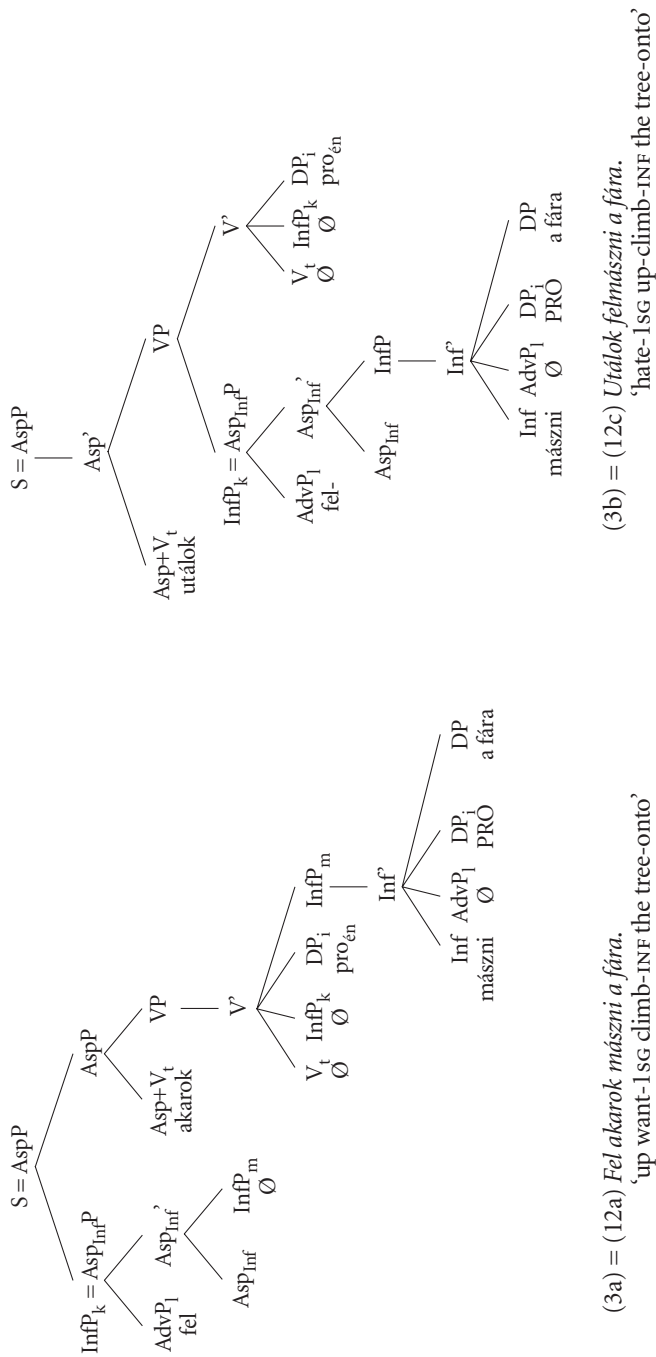


Figure 2.

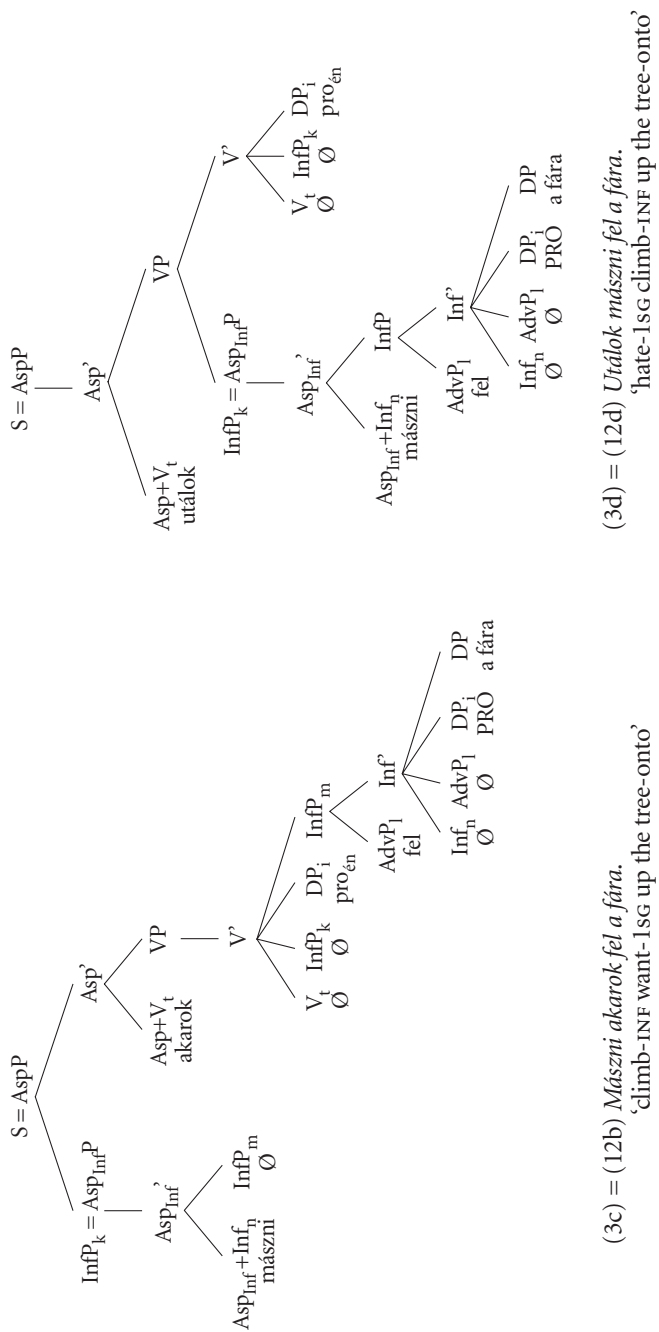


Figure 2. (continued)

of its own predicate (e.g. (4a)). Another important feature of the analysis worth mentioning is that the ASPM' move operation (6) is not obligatory for infinitival predicates and hence, as a consequence of the Economy Principle, this move is practically not permitted to take part in a successful computation.

To sum up the analysis of sentences exemplified by 'want', it should be emphasized that the representative of the InfP constituent serving as an aspectualizer in the AspP-specifier of the main clause is essentially a single head from the perspective of phonology, which, however, is not necessarily the Inf head itself but it can be the aspectualizer of the given InfP (or its single-head-size representative; see also Section 3.1).

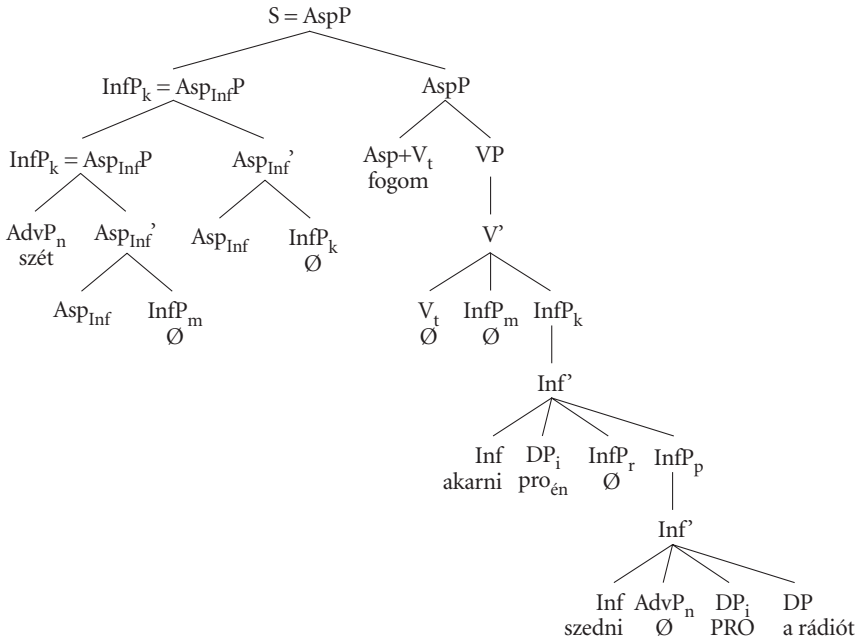
Now, on the basis of these remarks, analyzing sentences (12c–d), illustrating syntactic consequences of the aspectual behavior of 'hate', is quite simple. The InfP_k argument is base-generated as a sister of the finite verb. It fulfills no aspectualizing function, so it is the finite verb itself that enters the AspP-shell of the main clause. The PHON constraint is therefore satisfied; hence, the InfP_k argument is permitted to remain as a whole and moves to the VP-specifier as a whole to satisfy the REF principle (8). The internal architecture of the InfP_k – especially with respect to its own aspectual shell – shows precisely the same two kinds of syntactic structures in the case of the perfective (12c) and the progressive (12d) as in the case of (12a) and (12b), respectively, which have the same aspectual values.

3. The structure of verb clusters

Now we are in a position to return to the general problem of verb clusters.

Section 3.1 is devoted to the analysis of the syntactic structure of the sentence type exemplified by (1a). It will be shown that the derivation of the sentence containing more infinitives than the sentences discussed so far requires no more tools than the rules ASP and PHON presented above. As for the "full roll-up" sentence type, exemplified by (2c), which I consider to be the basic focused type (in spite of the fact that many speakers prefer the English (or partial roll-up) order given in (2b)), its derivation depends on a similar phonological constraint: PHON'. This principle concerns infinitival predicates (not incorporating into the Asp head); see Section 3.2. In 3.3, a straightforward generalization of my "verb cluster theory" based on moving aspectualizers will be demonstrated: the question as to what happens if the aspectualizer to be moved is a focused InfP.

It is to be noted in advance that Section 4 provides a detailed comparison of competing computations resulting in word order variants of different degrees of grammaticality in the case of examples in (1), (2), (3a) and two basic series out of those tested by Szendrői and Tóth (2001).



(1a) = (15) *Szét fogom akarni szedni a rádiót.*
 ‘away will-1SG want-INF want-INF take-INF the radio-ACC’

Figure 3.

3.1 “Climbing” preverb in neutral sentences

The syntactic analysis of the neutral sentence in (1a), repeated here as (15), will be discussed on the basis of the structural representation demonstrated in Figure 3. At first sight, what appears to be the case is that the preverb ‘away’, which belongs to the infinitive ‘take-INF’ semantically, “climbs up” into the (AspP-) specifier position of the finite verb, immediately preceding the finite verb (‘will-1sg’). The finite verb is itself the predicate of the InfP with ‘want-INF’ as its head, which, in turn, is the predicate of the InfP projected by ‘take-INF’. As for the preverb’s long way from the most embedded InfP to the specifier of AspP position in the finite clause, what we think to be a straightforward analysis is that the preverb stops over in the InfP that belongs to the intermediate ‘want-INF’ head. In other words, movement of the particle takes place in a successive cyclic fashion, rather than in one step.

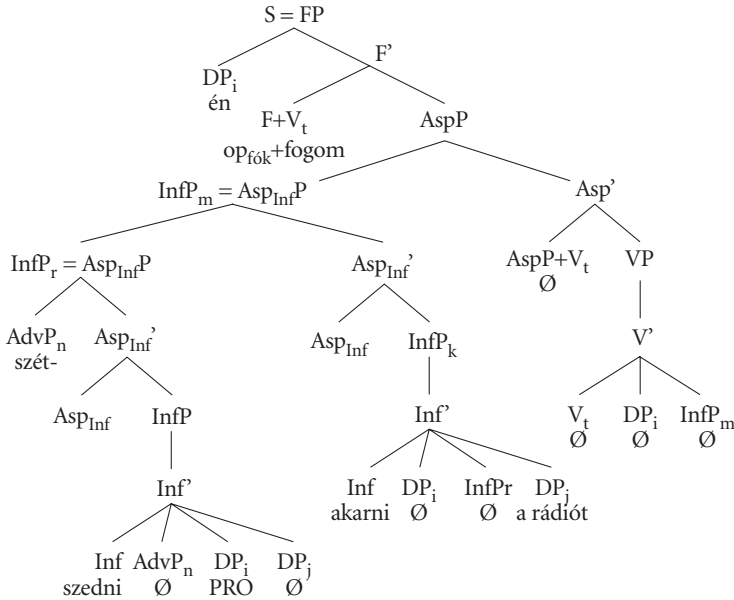
(15) *Szét fogom akarni szedni a rádiót.* = (1a)
 away will-1SG want-INF take-INF the radio-ACC
 ‘I will want to take apart the radio.’

The story we propose is essentially this, indeed, at least in respect of phonological contents, but the moving syntactic constituents are more difficult. Remnant phrases move in the sense used by Koopman and Szabolcsi (1998), or we can say that certain parts of certain moving constituents are spelt out in earlier phases of computation than the complement of these constituents. The essential point is that our explanation relies on predictable movement operations of aspectualizers on each V/Inf level.

The aspectualizer of ‘will’ is the InfP_m phrase, as is denoted in Figure 3, which is associated with the semantic content that someone wants to take apart the radio. InfP_m is situated in the AspP-specifier of the main clause as a phonologically appropriate (PHON) remnant since its phonetic form is limited to a single word – the preverb ‘away’. As for this InfP_m phrase, its head is the infinitival verb ‘want-INF’ whose aspectualizer is the InfP_r in Figure 3, which is associated with the semantic content that someone takes apart the radio. The head of InfP_r is the infinitival verb ‘take-INF’. The particle ‘away’ (AdvP_n) is the aspectualizing argument of this Inf head in the manner described above.

We have revealed the predicates and their aspectualizing arguments so far, advancing from top to bottom. Now we should enumerate aspectual move operations (ASPM), listing them from bottom to top. Inside the InfP_r domain, the lowest infinitival projection, the preverb enters the aspectual shell that belongs to its own (semantic) predicate, ‘take-INF’. Then, InfP_r itself, inside the InfP_m phrase, headed by ‘want-INF’, enters the outer aspectual shell of this infinitival projection, resulting in the string ‘away – want-INF – take-INF – radio’. As the aspectualizer of the finite (auxiliary) verb ‘will-1sg’ is InfP_m, this phrase should get into the AspP-specifier of the main clause. (The auxiliary gets incorporated into the Asp head of the finite level.) However, due to the PHON constraint, InfP_m is only permitted to move to the specifier of Asp as a remnant, with the phonetic material consisting of nothing more than the outermost shell containing the mere word ‘away’. The inner InfP_k unit (‘want-INF – take-INF radio’) should be extraposed to the original level of the V of the main clause (or alternatively, it should be spelt out before the final move of InfP_m).

Thus, it has been demonstrated that the word order of (1a) = (15) (and the accompanying intonation pattern and syntactic structure) can be derived from the building blocks of the theory put forward in the earlier sections. Alternative word orders may arise as a result of alternative computations. It might even be the case that some of these can be derived “cheaper” than (15) (due to appropriate moves). These “cheaper” computations, however, would all collapse at the syntax–phonology interface, as they would not satisfy the PHON constraint (see Section 4 for more details).



(2c) = (16) *’Én fogom szétszedni akarni a rádiót.*
 ‘I will-1SG away take-INF want-INF the radio-ACC’

Figure 4.

3.2 “Full roll-up” in focused sentences

The focused sentence (2c), repeated here as (16), does not exhibit a “climbing preverb” analyzed in 3.1. Rather, it seems to follow a special “roll-up” syntactic strategy: $[akarni_1 [szedni_2 [szét_3]]] \rightarrow [akarni_1 [[szét_3] szedni_2 \dots]] \rightarrow [[[szét_3] szedni_2 \dots] akarni_1 \dots]$, at least in the zone immediately following the finite verb (see Figure 4).

(16) *??Én fogom szétszedni akarni a rádiót.* = (2c)
 I will-1SG away take-INF want-INF the radio-ACC
 ‘It is me that will want to take apart the radio.’

This structural difference can be derived from a certain difference built-in to the ASP theory (6): unless they act as their own aspectualizers, infinitival predicates do not incorporate into the corresponding Asp head. Thus, in the aspectual shell of an infinitival phrase, the aspectualizing constituent occupying the AspP-specifier will be adjacent in the string to the Inf head in such a way that they do not form structurally a specifier-head relation within the same projection. This bigger structural

distance may serve as a motivation for the “weakened” variant of the earlier PHON constraint (14) put forward below:

- (17) **PHON'**: *_{[AspP InfP_j [Asp' Ø... [XP X head ...]]]}, if the phonetic form that belongs to the InfP contains some phonological material on the right side of the Inf Head.

Thus, what is not permitted at the phonological interface, is merely the state of affairs where the constituent preceding a (phonetically present) X head that occupies the corresponding AspP-specifier is such that it contains some phonological material – besides the head itself – not only on the left side of the head but on the right side as well.

In the course of the computation of the focused sentence (16), due to the “weakening”, or “unilateralization”, of the phonological constraint – in addition to the fact that in focused sentences the finite auxiliary can be found in the focus head instead of the Asp head at the point when the computation reaches the phonological interface – it is sufficient that only the argument ‘the radio-ACC’, on the right side of the corresponding head, is extraposed from the huge aspectualizers (minimally to the level of ‘want-INF’). In contrast to earlier derivations, the preverb ‘away’ can enter the AspP-specifier of its predicate ‘take-INF’ inside the InfP_r domain (→ *szét-szedni*). At this stage, the remnant of InfP_r without ‘the radio-ACC’ moves into the AspP-specifier of ‘want-INF’ inside the InfP_m domain. And finally, due to the newly formulated PHON' constraint, the InfP_m – with *szét-szedni-akarni* as its phonetic realization – is permitted to occupy the AspP-specifier of the main clause. The finite auxiliary going through the Asp head will move on further towards the focus head (in whose specifier constituent the subject ‘I’ can be found; see e.g. É. Kiss (1998a), on the basis of Brody (1990)).

It will be verified in Section 4 that the computation just proposed can be regarded as optimally “cheap”. Alternatives like (2a, b) can be produced more expensively, at the cost of additional extrapositions. It will also be claimed, however, that in a broader perspective on grammar, non-syntactic factors are to be considered as well, which can serve as an explanation for the grammaticality judgments provided in (2).

3.3 F_{InfP} aspectualizers

This subsection is devoted to the demonstration of a straightforward generalization of my “verb cluster theory” based on moving aspectualizers. The focused sentence to be analyzed is ambiguous:

- (18) *Péter* 'SZERDÁN *akarta megírni a zárthelyit.*
 Peter Wednesday-on wanted PERF-write-INF the test-ACC
 'It is on Wednesday that Peter wanted to write the test.'

It is easier to construct the syntactic structure of the less natural reading according to which there is a certain test to be written on a definite day, say, on Saturday. On Wednesday, Peter felt like he wanted to write it but later he changed his mind. Indeed, on Friday, he no longer wanted to write it. (The day of the test is Saturday, all along.) In this case, the temporal adjunct belongs to the main clause so it is plausible that it occupies the FP-specifier position of the main clause (see e.g. É. Kiss 1998a).

There is another, more natural reading, however, according to which the temporal adjunct belongs to the InfP. In this reading, there are more points of time when the given test is allowed to be written, and Peter wants to choose the one held on Wednesday. An InfP in Hungarian can have its own FP shell, and not only in a semantic sense, witnessed by the sentence below:

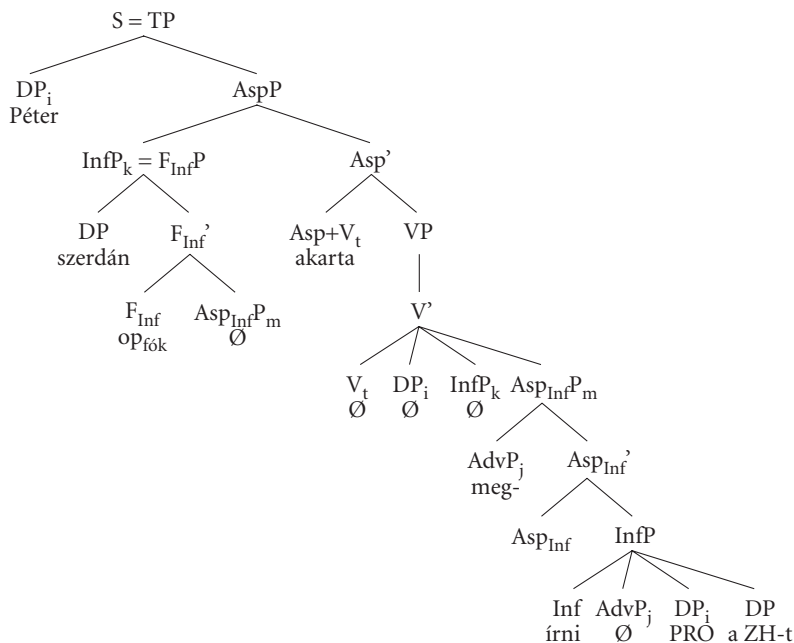
- (19) *Rühellek* ['SZERDÁN *megírni egy zárthelyit.*
 hate-1SG Wednesday-on PERF-write-INF a test-ACC
 'I hate writing a test just ON WEDNESDAY.'

The problem with sentence (18) (as opposed to (19)), in the second reading where the date of the test is not fixed, is that the focus of the infinitival phrase ('Wednesday-on') precedes the finite verb. How is that possible?

The crucial observation is that the focus shell belonging to the InfP is just the outermost shell of this InfP – in just the same way as many of our earlier analyses were based on the approach according to which it is the outermost shell of moving aspectualizer InfPs whose phonetic material moves (in the earlier examples it was the aspectual shell that moved). Thus the analysis we propose is as follows (see also Figure 5). The aspectualizer of 'want' happens to be a focused InfP ($\text{InfP}_k = F_{\text{InfP}}$), and its remnant – just the outermost focus shell – will occupy the AspP-specifier position in the main clause.

As for semantics, two relations should be distinguished. InfP_k c-commands the finite Asp' domain but this relation is not one that holds between new information and presupposition, characteristic of the focus construction, but rather a relation between an aspectualizer and the "aspectualized" part of the sentence. In fact, the focus relation holds between the temporal adjunct and the complement part of the InfP – inside the InfP!

As for phonology, potentially two kinds of constraints may apply to the temporal adjunct, which provides the phonological material of both the aspectualizer and the part of the focus construction carrying the new information. The focus construction is known to be subject to a phonological constraint, which essentially



- (18) *Péter szerdán akarta megírni a zárthelyit.*
 'Péter Wednesday-on wanted PERF-write-INF the test-ACC'

Figure 5.

coincides with the one declared in PHON' (17). The stricter PHON constraint (14), thus, need not be satisfied. So, 'on Wednesday' in (18) could be replaced by, say, 'on a cloudy but quite warm Saturday'.

4. Competing computations

In the first part of this section, the framework is extended to account for some of the results of the surveys carried out by Szendrői and Tóth (2001). In particular, two sequences of characteristic examples are considered: one involving four verbs (V/Inf) and a particle (20) and the other involving four verbs with no particle (21). Then, we return to our basic examples (1), (2) and (3a).

The essence of the extension lies in the status of the PHON criterion (14), exerting restrictions on the syntactic environment of finite V heads occupying the Asp head position (\rightarrow "single-word-size material in Asp-specifier"). The point is that this constraint has a certain influence on the phonetic realization of AspP-

Table 2. Evaluation of the word order variants shown in (20) ('with preverb') and (21) ('without preverb')

without pv.	SYN	PHON	accept.	with pv.	SYN	PHON	accept.
English	XXX	✓	?? (2/11/11)	English	XXX	✓	??? (4/7/13)
partial r-u	X	✓	✓(19/2/3)	partial r-u	XX	h r	?? (9/4/11)
full r-u	✓	h	? (10/6/9)	full r-u	Xx	h H R	* (1/5/17)

specifiers under other conditions as well, namely when there is no phonetic material in the Asp position. It is the weaker PHON' criterion (17) (→ "non-right-branching") that has to be satisfied in this case, but it is reasonable to assume that violating the stricter PHON criterion is still dispreferred. Practically, we should extend the minimalist approach (Chomsky 1995) based on competing *syntactic* computations (where move operations are costly and the cheapest computations result in grammatical sentences) to the whole system of grammar. What is relevant here is that we should regard certain phonetic criteria, too, as such that can be violated, but at some cost, and costs of different sources should be considered altogether.

Let us apply this approach first to the series of examples in (20a–c), surveyed by Szendrői and Tóth (2001). The *m/n/k* triples in the 'accept(ability)' column of Table 2 show their results as follows: *m* persons have considered the given sequence of words to be a grammatical sentence, *n* persons agreed that it 'may be' grammatical, and *k* judged it ungrammatical. The 'without preverb' side of the same table shows the evaluation of the series of potential sentences in (21). Other columns will be explained a bit later. I would like to mention here in advance that Szendrői and Tóth (2001) have not created separate groups for cases with and without preverbs but they mention after facing the results that "an additional parameter within the groups [is]: whether the last infinitive had a preverbal particle." My method of evaluation will not only explain the differences between variants within the types but those between the two types as well.

- (20) a. ^{???}RITKÁN fog akarni járni fellépni a vidéki
rarely will want-INF go-INF preverb_{up}-step-INF the provincial
színházakban. "English"
theaters-in
'It is rarely that he will want to go to play in the provincial theaters.'
- b. ^{??}RITKÁN fog akarni fellépni járni a vidéki színházakban.
"partial roll-up"
- c. ^{*}RITKÁN fog fellépni járni akarni a vidéki színházakban. "full roll-up"

- (21) a. ^{??}PÉTER fog járni tanulni úszni. “English”
 Peter will go-INF learn-INF swim-INF
 ‘It is Peter that will go to learn how to swim.’
 b. [?]PÉTER fog járni úszni tanulni. “partial roll-up”
 c. ^{???}PÉTER fog úszni tanulni járni. “full roll-up”

Let us start with the “full roll-up” word order in (20c), which is judged to be the worst alternative in (20) and to be unacceptable despite the fact that in the framework proposed in the first three sections this variant should be regarded as the result of the cheapest syntactic computation and, hence, as the “basic” focused variant. I retain this analysis – by attributing the negative judgment on its grammaticality to phonetic factors in the extended framework proposed earlier in this section. (22) below demonstrates the relevant (but not all) factors of its computation step by step.

- (22) 1. ... V [akarni [járni [fellépni [a vidéki színházakban]]]].
 2. ... V [akarni [járni [fellépni t_j] [a vidéki színházakban]_j]]. x
 3. ... V [akarni [[fellépni t_j]_i járni t_i [a vidéki színházakban]_j]]. x
 4. ... V [akarni [[fellépni t_j]_i járni t_i t_j] [a vidéki színházakban]_j]]. xx
 5. ... V [[[fellépni t_j]_i járni t_i t_j]_k akarni t_k [a vidéki színházakban]_j]]. xx
 6. ... [[[[fellépni t_j]_i járni t_i t_j]_k akarni t_k [a vidéki színházakban]_j]_l V t_l].
 xx “full roll-up”

In step 1 (22.1) all InfPs, the future aspectualizers, still occupy the corresponding complement positions of their selecting heads. In the lowest relevant cycle, the DP_j undergoes extraposition (22.2), as otherwise the movement of the InfP projection of *lépni* ‘step-INF’, which is required by ASPM and triggered by a feature (22.3), could not target the Asp-Spec position of *járni* ‘go-INF’, since it would violate PHON’. These aspectual moves are equally unavoidable in all competing computations, so their costs will not be observed or registered. Extrapositions, however, should be carefully noted. We mark them with x’s (22.2), and we propose that they should be legitimate moves (at least in certain language types of UG) in spite of having been triggered by no feature, but an immense cost should be assigned to them, simply because of their indirect trigger. Step (22.4) shows another extraposition, concerning the same DP again, which turns the InfP of *járni* ‘go-INF’ into a non-right-branching remnant – one that would satisfy PHON’. This remnant may now legitimately occupy the Asp-Spec position of *akarni* ‘want-INF’ (22.5). As the finite V position is phonetically empty in the focused construction under examination (the verb occupies the F position), criterion PHON (14) exerts no restriction on the Asp-Spec position of the finite verb (*fog* ‘will’) so no more extraposition is required before the last aspectual move (22.6).

Before demonstrating the analyses concerning the alternative variants and the framework in which the “full roll-up” variant proves to be the cheapest, its unfavorable phonetic properties are going to be pointed out. As has been mentioned, the effect of the stricter PHON criterion will be considered as one of preference. In the final structure in (22.6), there are two words in the Asp-Spec of *járni* ‘go-INF’ (‘h’: “heavy material”), and an even heavier expression can be found in the Asp-Spec of *akarni* ‘want-INF’ (marked by ‘H’). Furthermore, I propose that the right-branching nature of the expression in the Asp-Spec position of the finite verb (which is forbidden even by the weaker PHON’ criterion under the condition that the phonetic material of the V surfaces in the Asp head position) should be considered to be a disadvantage too (indicated by ‘R’ in Table 2). A favorable property of this perspective is that there is a possibility to eliminate these phonetic shortcomings at the cost of a third extraposition, while the final sum of costly operations would remain the same. So certain structural elements that we conjecture to be problematic will prove to be problematic somewhere in the *entire* grammar.

The first three steps of the computation of the “partial roll-up” construction are the same (23.1–3; see below), as these constitute the initial steps of the full “roll up”. Both computations require the extraposition of the locative DP (23.2). In step 4, the whole InfP argument of *akarni* ‘want-INF’ is permitted to occupy the aspectual specifier position because in this computation the inner InfP of *akarni* ‘want-INF’ will surface higher, as a result of moving (in step 6) into the Asp-Spec of the finite verb. Hence, PHON’ exerts no restriction on the Asp-Spec of *akarni* ‘want-INF’. We should return to two non-trivial details, however. Is the inner InfP belonging to the Inf head of *akarni*, the projection below its own aspectual shell, allowed to serve as the aspectualizer of *fog*? I argue that criterion ASPM is to be interpreted in such a way that the appropriate representatives of an aspectualizer of category XP are those projections of head X that consist of the (entire or remnant) version of the inner XP and an arbitrary number of the operator (/aspectual) shells that belong to the given XP. In this approach, then, the difference between “roll-up” and “non-roll-up” aspectualizing is not that in the latter case the aspectualizer would not occupy the given Asp-Spec position, which would amount to a violation of the ASPM criterion, but rather, that the resulting new InfP as an aspectualizer (again, relative to a higher level) can move further in two ways: as a remnant without its inner InfP material (→ “roll-up”) or without its outer aspectual shell. Step (23.5) illustrates this latter possibility in the case of the InfP of *akarni* as an aspectualizer of *fog*. An important element of this analysis is that it requires that the inner InfP is extraposed from under its own aspectual shell and this move (marked with capital ‘X’) is to be regarded as an element of computation more costly than extrapositions of non-verbal XP’s.

- (23)
1. ... V [*akarni* [*járni* [*fellépni* [*a vidéki színházakban*]]]]].
 2. ... V [*akarni* [*járni* [*fellépni* t_j] [*a vidéki színházakban*] $_j$]]. x
 3. ... V [*akarni* [[*fellépni* t_j] $_i$ *járni* t_i [*a vidéki színházakban*] $_j$]]. x
 4. ... V [[[*fellépni* t_j] $_i$ *járni* t_i [*a vidéki színházakban*] $_j$] $_k$ [*akarni* t_k]]. x
 5. ... V [[[*fellépni* t_j] $_i$ *járni* t_i [*a vidéki színházakban*] $_j$] $_k$ t_l] [*akarni* t_k] $_l$.
xX
 6. ... [*akarni* t_k] $_l$ V [[[*fellépni* t_j] $_i$ *járni* t_i [*a vidéki színházakban*] $_j$] $_k$ t_l] t_l .
xX “partial roll-up”

The phonetic properties of the “partial roll-up” construction are much more favorable than those of the “full roll-up” construction (see also Table 2): a problematic element is the two-word unit (‘h’) in the Asp-Spec before *járni*. The right-branching (‘r’) in the specifier position of the Inf head where the trace of *akarni* can be found is also worth regarding as a minor phonetic drawback.¹⁰

(24) demonstrates the simplest computation resulting in the “English order”. It can be checked on the basis of what has been said in connection with the first two computations that the given word order is derivable by two aspectualizing operations by the move of inner InfPs: (24.4) and (24.7), which requires one InfP extraposition in the first case (24.3: ‘X’) and two InfP extrapositions (24.5 and 24.6) in the second case. All in all, a huge syntactic cost belongs to this computation (i.e. [XXX]), at the same time, the result in (24.7) has no phonetic disadvantages (in the sense considered here).

- (24)
1. ... V [*akarni* [*járni* [*fellépni* [*a vidéki színházakban*]]]]].
 2. ... V [*akarni* [[*fellépni* [*a vidéki színházakban*]]] $_i$ [*járni* t_i]]].
 3. ... V [*akarni* [[*fellépni* [*a vidéki színházakban*]]] $_i$ t_j] [*járni* t_j]]]. X
 4. ... V [[*járni* t_i] $_j$ [*akarni* [[*fellépni* [*a vidéki színházakban*]]] $_i$ t_j] t_j]]. X
 5. ... V [[*járni* t_i] $_j$ t_k] [*akarni* [[*fellépni* [*a vidéki színházakban*]]] $_i$ t_j] t_j]].
XX
 6. ... V [[*járni* t_i] $_j$ t_k] [*akarni* [t_i t_j] $_k$] [*fellépni* [*a vidéki színházakban*]]] $_i$.
XXX
 7. ... [*akarni* [t_i t_j] t_j] $_k$ V [[*járni* t_i] $_j$ t_k] [*fellépni* [*a vidéki színházakban*]]] $_i$. XXX
“English”

Instead of comparing these three competing computations now, we turn to a similar analysis of computations providing examples in (21) (see (25)–(27) below). We do so, as in this way we can make a summarized comparison, which will show why it is that, on the one hand, taken altogether, word orders with four verbs and a preverb (20) are much less acceptable than those with no preverb (21). On the other hand, we can also explain why the “full roll-up” variant is significantly better without a preverb (21c) than with one (20c).

As *úszni* ‘to swim’ has no object or oblique argument, the computation of the “full roll-up” construction in (21c) requires no extraposition; compare (25) below and (22) above. The absence of the preverb (cf. (22)) implies phonetic advantages as well: no problems occur with respect to right-branching, and there is only a minor drawback with respect to “heavy words in Spec” (‘h’), as the Spec of *járni* contains a two-word unit.

- (25) 1. ... V [*járni* [*tanulni* [*úszni*]]].
 2. ... V [*járni* [[*úszni*]_i *tanulni* *t_i*]].
 3. ... V [[[*úszni*]_i *tanulni* *t_i*]_j *járni* *t_j*].
 4. ... [[[[*úszni*]_i *tanulni* *t_i*]_j *járni* *t_j*]_k V *t_k*. “full roll-up”
- (26) 1. ... V [*járni* [*tanulni* [*úszni*]]].
 2. ... V [*járni* [[*úszni*]_i *tanulni* *t_i*]].
 3. ... V [[[*úszni*]_i *tanulni* *t_i*]_j *járni* *t_j*].
 4. ... V [[[*úszni*]_i *tanulni* *t_i*]_j *t_k*] [*járni* *t_j*]_k. X
 5. ... [*járni* *t_j*]_k V [[[[*úszni*]_i *tanulni* *t_i*]_j *t_k*]_k. X “partial roll-up”
- (27) 1. ... V [*járni* [*tanulni* [*úszni*]]].
 2. ... V [*járni* [[*úszni*]_i *tanulni* *t_i*]].
 3. ... V [*járni* [[*úszni*]_i *t_j*] [*tanulni* *t_i*]_j]. X
 4. ... V [[*tanulni* *t_i*]_j [*járni* [[*úszni*]_i *t_j*]_j]_j]. X
 5. ... V [[*tanulni* *t_i*]_j *t_k*] [*járni* [[*úszni*]_i *t_j*]_j *t_k*]_k. XX
 6. ... V [[*tanulni* *t_i*]_j *t_k*] [*járni* *t_i* *t_j*]_k [[*úszni*]_i *t_j*]_l. XXX
 7. ... [*járni* *t_i* *t_j*]_k V [[*tanulni* *t_i*]_j *t_k*]_k [[*úszni*]_i *t_j*]_l. XXX “English”

The computations of the “partial roll-up” and the “English” word order (see (26)–(27) above) should be compared to those of the analogous constructions in (23)–(24). Obviously, the InfP extrapositions (‘X’: (26.4), (27.3, 5, 6)) cannot be avoided, independently of the absence of preverbs, when inner InfPs move from under their own aspectual shells to become aspectualizers ((26.5), (27.4, 7)). As for the phonetic evaluation, the final structures in (26.5) and (27.7) obviously show no right-branching problems. But there are no problems with heavy words either.

Now we are in an excellent position to make a comparative evaluation concerning acceptability of all six computations on the basis of the “costs” revealed so far, summarized in Table 2 above. It can be observed, first of all, that the “full roll-up” construction with a preverb is much worse (i.e. its computation is much more costly) than the one with no preverb, so the immense difference in their acceptability is not to be attributed to the extreme character of the situation expressed by the latter construction but is derivable from syntactic and/or phonetic “costs”. It turns out in the approach proposed in this section that practically all three word order variants in (20) have a very expensive computation – which is in total harmony

with the fact that even the best variant, the “partial roll-up” construction in (20b), is rather refused than accepted by speakers.

Second, the “full roll-up” construction with no preverb has almost no computational costs in contrast with the one with a preverb, whose computation comes with both syntactic and phonetic costs. These factors account for the fact that the former construction is more or less acceptable ([h]), and for the fact that the latter is definitely refused ([xxhHR]). Furthermore, we obtain an explanation for the fact that the former one is the second best word order in comparison with the results of the competing computations, whilst the latter is the worst.

Both in (20) and in (21) the “partial roll-up” was judged to be the optimal solution by speakers. This fact can be accounted for by assuming a (typical) strategy according to which minor syntactic costs ([X] or [xX]) are more tolerable than phonetic disadvantages, but major syntactic costs ([XXX]) are not really tolerated (but still a bit more tolerable than huge phonetic shortcomings ([hHR]).

This approach thus can account for the average results. But it can explain individual differences as well. According to my intuition, for instance, (20c), and “full roll-up” variants generally (Alberti 1999), are almost perfect; which can be accounted for by assuming a version of the strategy according to which the decisive factor is definitely the syntactic cost as opposed to the phonetic costs.

Now let us return to our basic examples in (1) and (2) and analyze them in the extended framework proposed in this section. (28)–(30) below demonstrate the computations resulting in the focused variants in (2). As above, it is the “full roll-up” variant that the smallest syntactic cost belongs to, because a steady execution of the roll-up strategy requires only the extraposition of DPs (‘x’: (28.3)). The other two computational strategies obviously require the extraposition of InfPs (‘X’: (29.4), (30.3)), which has been considered to be a more costly move from a syntactic perspective.

- (28) 1. ... V [akarni [szedni [szét [a rádiót]]]].
 2. ... V [akarni [szét_i szedni [t_i [a rádiót]]]].
 3. ... V [akarni [szét_i szedni [t_i t_j] [a rádiót]_j]]. x
 4. ... V [[szét_i szedni [t_i t_j]]_k akarni [t_k [a rádiót]_j]]. x
 5. ... [[szét_i szedni [t_i t_j]]_k akarni [t_k [a rádiót]_j]]_l V t_l. x “full roll-up”
- (29) 1. ... V [akarni [szedni [szét [a rádiót]]]].
 2. ... V [akarni [szét_i szedni [t_i [a rádiót]]]].
 3. ... V [[szét_i szedni [t_i [a rádiót]]]_j [akarni t_j]].
 4. ... V [[szét_i szedni [t_i [a rádiót]]]_j t_k] [akarni t_j]_k. X
 5. ... [akarni t_j]_k V [[szét_i szedni [t_i [a rádiót]]]_j t_k] t_k. X
 “English” (“partial r-up”?)

- (30) 1. ... V [*akarni* [*szedni* [*szét* [*a rádiót*]]]].
 2. ... V [*akarni* [*szét_i* [*szedni* [*t_i* [*a rádiót*]]]]]].
 3. ... V [*akarni* [*szét_i* *t_j*] [*szedni* [*t_i* [*a rádiót*]]_j]. X
 4. ... [[*szét_i* *t_j*]_k *akarni* *t_k* [*szedni* [*t_i* [*a rádiót*]]_j]]_i V *t_i*. X
 “climbing preverb”

From a phonetic perspective, however, preference is given to the “English order” (even though this does not correspond to my personal intuition), which coincides with a “partial roll-up” construction in this particular case, because this word order is perfect in the relevant phonetic respects. The “climbing preverb” strategy is not widely accepted in the focused case, which can be attributed to the fact that its syntactic computation is not cheaper than that of the alternatives and it has a phonetic disadvantage too (see Table 3 below).

How is it possible, then, that the “climbing preverb” strategy is undoubtedly significantly the best (and moreover, practically the only acceptable) computation in the neutral case; see (1) and (31)–(34) below. My solution to this puzzle is the same as it was in the last section (see (36)): the aspectual moves are obligatory, so the “English order” is excluded in the particular case, and it is also excluded now (31.6/32.6) that the PHON constraint is violated (at any cost). Hence, the “climbing preverb” strategy seems to remain the only one, independently of its substantial syntactic costs ([XX]). Note that it is perfect phonetically, however.

- (31) 1. ... V [*akarni* [*szedni* [*szét* [*a rádiót*]]]].
 2. ... V [*akarni* [*szét_i* *szedni* [*t_i* [*a rádiót*]]]]].
 3. ... V [*akarni* [*szét_i* *szedni* [*t_i* *t_j*]]] [*a rádiót*]_j]. x
 4. ... V [[*szét_i* *szedni* [*t_i* *t_j*]]_k *akarni* [*t_k* [*a rádiót*]]_j]. x
 5. ... V [[*szét_i* *szedni* [*t_i* *t_j*]]_k *akarni* [*t_k* *t_j*]] [*a rádiót*]_j. xx
 6. ... [[*szét_i* *szedni* [*t_i* *t_j*]]_k *akarni* [*t_k* *t_j*]]_i *fogom* *t_i* [*a rádiót*]_j. xx
 “full roll-up”
- (32) 1. ... V [*akarni* [*szedni* [*szét* [*a rádiót*]]]].
 2. ... V [*akarni* [*szét_i* *szedni* [*t_i* [*a rádiót*]]]]].
 3. ... V [*akarni* [*szét_i* *szedni* [*t_i* *t_j*]]] [*a rádiót*]_j]. x
 4. ... V [[*szét_i* *szedni* [*t_i* *t_j*]]_k [*akarni* *t_k* [*a rádiót*]]_j]. x
 5. ... V [[*szét_i* *szedni* [*t_i* *t_j*]]_k *t_i*] [*akarni* *t_k* [*a rádiót*]]_j]. xX
 6. ... [[*szét_i* *szedni* [*t_i* *t_j*]]_k *t_i*]_m *fogom* *t_m* [*akarni* *t_k* [*a rádiót*]]_j]. xX
 “partial climbing”
- (33) 1. ... V [*akarni* [*szedni* [*szét* [*a rádiót*]]]].
 2. ... V [*akarni* [*szét_i* *szedni* [*t_i* [*a rádiót*]]]]].
 3. ... V [*akarni* [*szét_i* *szedni* [*t_i* *t_j*]]] [*a rádiót*]_j]. x
 4. ... V [[*szét_i* *szedni* [*t_i* *t_j*]]_k [*akarni* *t_k* [*a rádiót*]]_j]. x

5. ... V [[*szét_i szedni* [*t_i t_j*]]_k *t_l*] [*akarni t_k [a rádiót]_j*]_l. xX
 6. ... V [[*szét_i szedni* [*t_i t_j*]]_k *t_l*] [*akarni t_k t_j*]_l [*a rádiót*]_j. xXx
 7. ... [*akarni t_k t_j*]_l *fogom_V* [[*szét_i szedni* [*t_i t_j*]]_k *t_l*] *t_l* [*a rádiót*]_j. xXx
“partial roll-up”
- (34)
1. ... V [*akarni [szedni [szét [a rádiót]]]*].
 2. ... V [*akarni [szét_i szedni* [*t_i [a rádiót]]]*].
 3. ... V [*akarni [szét_i t_j] [szedni* [*t_i [a rádiót]]]_j]*. X
 4. ... V [[*szét_i t_j*]_k [*akarni t_k [szedni* [*t_i [a rádiót]]]_j]]]*. X
 5. ... V [[*szét_i t_j*]_k *t_l*] [*akarni t_k [szedni* [*t_i [a rádiót]]]_j]*. XX
 6. ... [[*szét_i t_j*]_k *t_l*]_m *fogom_V* *t_m* [*akarni t_k [szedni* [*t_i [a rádiót]]]_j]*. XX
“climbing preverb”

In an even more careful study, a construction like that in (33) above, which can be called “neutral partial roll-up,” should be considered too. It violates no phonetic constraint, and its syntactic computation is almost more costly than that of the “climbing preverb” construction – provided that ‘xx’ is more expensive than ‘X’. Why is it, then, that the word order variant in (33.7) is unacceptable? The analysis in (35) below will give the answer.

- (35)
1. ... V [*mászni [fel [a fára]]]*. → (3a) (see (33))
 2. ... V [*fel_i [mászni* [*t_i [a fára]]]*].
 3. ... V [*fel_i t_j] [mászni* [*t_i [a fára]]]_j]*. X
 - a.4. ... [*fel_i t_j*]_k *akarok_V* *t_k* [*mászni* [*t_i [a fára]]]_j]*. X
 - b.4. ... V [*fel_i t_j] [mászni* [*t_i t_l*]]_j [*a fára*]_l. Xx
 - b.5. ... [*mászni* [*t_i t_l*]]_j *akarok_V* [*fel_i t_j*]_j [*a fára*]_l. Xx

The input (argument) structure in (35.1) will result in the surface structure in (35a.4), due to the “preverb climbing” strategy (35.1–2–3–a.4). A “neutral partial roll-up” strategy – see the computation in (35.1–2–3–b.4–b.5) – would be only a little bit more expensive syntactically and equally perfect phonetically. In this case, however, it is clear why this latter variant is absolutely unacceptable: this word order is the optimal expression of the meaning demonstrated in (3c) in the introductory section. It is to be regarded as a general principle of the extended aspectual theory proposed in this section that what is relevant is not the syntactic and phonetic “cost” of particular computations but a comparison between the basic computational strategies in typical cases, on the basis of which certain “winner strategies” will be chosen.

This “winner strategy” in neutral infinitival constructions is the “climbing preverb” strategy, and in focused cases some kind of “partial roll-up” strategy seems to be the best (which is phonetically almost perfect and has a not so costly syntactic computation).

Table 3. Evaluation of the word order variants shown in (1) and (2) (neutral and focused variants)

focused	SYN	PHON	accept.	neutral	SYN	PHON	accept.
climbing pv.	X	R	*/???	climbing pv.	XX	✓	✓
				partial cl.	xX	*h	*
				partial r-u.	XXx	✓	*
full r-u.	x	h	??	full r-u.	Xx	h *H	*
English ord.	X	✓	?	English o.	*ASPM		*

5. Concluding remarks

I have intended to show that a complete theory of all kinds of Hungarian verb cluster patterns can be formulated, based on “moving aspectualizers”. More importantly, the puzzle constituted by the immense difference between the neutral pattern with “climbing preverbs” and the “(partial) roll-up construction” of the focused pattern can be accounted for. It is claimed, furthermore, that in an extended theory where not only computational (syntactic) costs are considered but phonetic disadvantages of surface forms as well, the whole spectrum of grammaticality judgments concerning Hungarian (multiple) infinitival constructions can be accounted for in detail.

What is to be postponed now for future research is a wide-ranging comparison of this theory with other approaches concerning Hungarian verb cluster patterns. Nevertheless, I would like to make some remarks on the two basic trends.

One trend comprises analyses that are based on head movement (e.g. É. Kiss 1998b) whilst the other is based on moving (remnant) phrases (e.g. Koopman & Szabolcsi 1998).

An argument against the “head movement” approach is that phrases (such as, ‘tomorrow’ or ‘unfortunately’) can be inserted (‘↓’) between Vs in their [_V V V...V] verb cluster structure, which is scarcely compatible with the single-word-size of the proposed structure.

- (36) a. ↓ Szét *↓ fogom ↓ akarni ?↓ szedni ↓ a rádiót ↓ .
away will-1SG want-INF take-INF the radio-ACC
‘Tomorrow I will want to take apart the radio.’ (→ (1a))
- b. ↓ ÉN *↓ fogom ↓ szét- *↓ szedni *↓ akarni ↓ a
I will-1SG away want-INF take-INF the
rádiót ↓ .
radio-ACC
‘It is me that will want to take apart the radio tomorrow.’ (→ (2c))

In my approach, however, the places where no phrase can be inserted ($\ast\downarrow$) are precisely those positions that are enclosed by a specifier on the left side and a head on the right side (see Figures 3–4). Furthermore, relations like these are assumed to make up distinguished phonological units in the PHON constraints ((14), (17)), which are obviously islands for intervention (simply because of their essential single-word-size).¹¹

As for the “phrasal movement” approach, in connection with which Koopman and Szabolcsi’s (1998) theory has been mentioned, my approach is not against its spirit, but is rather to be regarded as a further development. What the original theory lacks is the motivation for categories like WP (the “verbal complex”) and NeutP (assumed to play a role only in neutral sentences) and some stipulations concerning movements and two kinds of internal NeutP structures depending on the existence or absence of preverbs (Koopman & Szabolcsi 1998:9):

[27] Within the domain of NeutP, VP cannot remain in situ. [next par.] If the relevant WP contains a VM [verbal modifier] in its specifier, VP must move out of WP. If it has no VM, VP moves to (Spec,WP) anyway and is not in situ. Since VP is always a remnant, containing nothing but head material, this leaves us with a single verb, as desired: [28] WPs that can license NeutP: a. [_{WP} VM t(vp)], b. [_{WP} VP_i t_i]. [next par.] *We remain agnostic as to why NeutP has these properties* [italics added – G. A.]. The motivation may even be intonational phonological; the consequences are clearly syntactic.

In my approach all stipulations and constraints triggering movement are thoroughly motivated either by phonological factors (PHON constraints) or by semantic (aspectual) factors (ASP); and there is no need for either attributing two distinct structures to neutral and focused sentences, or assigning two distinct internal structures to “verbal complexes” with and without preverbs.

The final question to be raised is the possibility of the application of the proposed verbal cluster theory based on moving aspectualizers to other languages, and especially the (continental) Germanic ones. Unfortunately, the answer, at least in the latter area, definitely seems to be negative. As was mentioned in 1.2, Hungarian can be characterized by a peculiar way of expression of aspect, and the relevant word order variants depend on aspectual factors (and phonetic constraints that also seem to be peculiar to Hungarian). Word order variability is undoubtedly a basic tool in the formal toolkit of UG and several semantic interpretational possibilities make use of them in different languages, but the intricate correspondence between the tools and the required interpretations varies from language to language.

Notes

1. My two-year work on the topic has been sponsored by the Széchenyi Professorial Scholarship (1999–2002), OTKA (F 026658: 1998–2001, T 038386: 2002–2006), and a grant of the Dutch Ministry of Education (the Third Memorandum of Understanding). Special thanks are due to Kriszta Szendrői, Katalin É. Kiss, Edwin Williams, Susi Wurmbrand, Hans den Besten and Marcel den Dikken for their valuable remarks on earlier versions of this paper (e.g. Alberti 1999, 2000). The five figures, made by Kata Balogh, come from Alberti and Medve's (2002) book.
2. The expression *puzzle* used in the first paragraph refers to the structural difference between (1a) and (2c) that seems to be immense (whilst version (2a), which resembles (1a), is not acceptable).
3. The two above mentioned authors, however, assume different structural relations for the two sentence types. A favorable feature of the syntactician É. Kiss's analysis is that her approach is based on a common base structure, [_V *mászok_V fel_{AdvP}*...], and that she uniformly attributes the expression of aspect to a designated syntactic position, the specifier position of VP. This position is the landing site of the perfectivizing preverb in (4a), while it accommodates a place-holding progressive operator in (4b). The semanticist Kiefer has no syntactic proposal that would be uniform in the above sense, neither does he regard it as his task to work out an entire syntactic framework. Nevertheless, the thorough semantic investigations in his article (Kiefer 1992b) undoubtedly indicate the limitations of any analysis that assumes that it is the movement of the preverb to the specifier of the VP that provides the perfect reading. His examples, cited above, make it apparent that this may only hold correct in a certain subset of relevant cases.
4. TP, QP and FP are assumed to occupy higher hierarchical positions; see Figure 4.
5. É. Kiss (1998a) herself accepted this new approach (cf. É. Kiss 1992).
6. The category of infinitives is often regarded as V (without tense feature). I would like to insist on the Inf denotation, however, because the V/Inf difference will prove to be relevant at a certain point of the discussion. Nevertheless, this notational treatment does not amount to a commitment with respect to the category of the head, as the difference mentioned can also be attributed to the tense feature.
7. Extraposition is defined here as a moving operation in the course of which an XP phrase leaves its subcategorizing head Y for a sister position of the predicate Z of phrase YP (or goes further from the neighborhood of this Z to a complement position of the predicate of ZP, etc.). As a result of the operation, the YP phrase itself will become a remnant (lacking XP that it formerly contained). The remnant YP carries less phonological material than the original YP does. This has the effect, for instance, that it becomes more prone to undergo movement. This technique of analysis based on extraposition and remnant phrases was inspired by Koopman and Szabolcsi (1998). An alternative to this technique, which is more popular nowadays, is to arrive at the structures resulting from the analyses demonstrated in the paper (or something essentially similar) by assuming that the XP and YP mentioned above are such that the XP is "spelt out by phonology" in an earlier phase of the computation

of the sentence than YP (in effect, parts of YP besides XP) is, if YP undergoes movement. (This proposal is due to Marcel den Dikken (p.c.).)

8. A parallel difference between the finite and the non-finite verb can also be observed in the case of focus. The finite verb must be incorporated into the F head (*A LEGNAGYOBB FÁRA másztam_F fel* / **fel-másztam* 'I (have) climbed up THE BIGGEST TREE' ('the biggest tree-onto climbed-1sg up / up-climbed-1sg')) whereas it is not obligatory for an infinitival verb to enter the F head of the focus shell that belongs to the InfP (*Buta dolog [éppen A LEGNAGYOBB FÁRA mászni_{F_{Inf}} fel* / *felmászni*] It is rather a stupid thing to climb up just THE BIGGEST TREE' ('stupid thing just the biggest tree-onto climb-INF up / up-climb-INF')).

9. Examples (13a–b) can be understood (accompanied by an appropriate intonation) as grammatical sentences, if the InfPs in question are regarded as contrastive topics. In this case, however, the PHON constraint is not violated, since the InfPs do not remain in the AspP-specifier but they occupy a much higher syntactic position at the point when the derivation reaches the phonological interface.

10. Remember criterion PHON' forbids the presence of right-branching phonetic material in the Spec position before an Inf head that is present phonetically. It can be mentioned here, too, that this phonetic disadvantage can be replaced with the syntactic cost of extraposing DP_j (in the course of the computation shown in (22)).

11. Another argument particularly against É. Kiss's (1998b) approach based on regarding preverbs as heads and not phrases that preverbs in Hungarian can serve as possible one-word answers, which É. Kiss (1998a: 134) herself considers to be an argument for analyzing preverbs as phrases.

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The Hungarian verbal complex

An alternative approach^{*}

Csaba Olsvay

1. Introduction

In this paper I examine the syntax of Hungarian verbal complexes, auxiliaries and verbal modifiers (VMs). I will discuss two phenomena in detail: inversion of the embedded infinitives and VM climbing. I will provide a standard minimalist analysis, in which the aspectual feature plays a crucial role. My claim is that both VMs and lexical verbs selecting no VM have an aspectual feature. VM climbing is forced by the checking of the aspectual feature of the T head, while in the case of infinitival inversion a complex predicate is formed. Auxiliaries, on the other hand, are aspectually defective verbs in Hungarian. These assumptions and the one that auxiliaries are syntactically and phonologically defective verbs, as well, will be shown to account for their syntactic behavior.

The paper is organized as follows. The linguistic data are demonstrated in 2.1. In 2.2 I deal with the problems related to the dual behavior of VMs, which is followed by a presentation of the basic assumptions of my paper in Section 3. In Section 4 infinitival inversion is discussed. I examine long VM movement in 5.1 and short VM movement in 5.2. In 6.1, analyzing the structure of some sentences containing auxiliaries in detail, we are led to the conclusion that auxiliaries are aspectually defective verbs. 6.2 is devoted to a brief discussion of stative verbs, which exhibit neither inversion nor VM climbing. In Section 7 some problems are revisited, and Section 8 summarizes the paper.

2. Preliminaries

2.1 The linguistic data

The class of Hungarian auxiliaries can be characterized in relevant respects by the data below. (1) gives a few examples of them.^{1, 2}

(1) Auxiliaries:

<i>fog</i>	<i>akar</i>	<i>tud</i>		<i>kezd</i>	<i>szokott</i>
will	want	pouvoir/savoir		begin	tend to

The examples in (2) represent the classes of verbal modifiers (the classification is adopted from Koopman & Szabolcsi 2000).

(2) Verbal modifiers (VMs):

<i>be</i>	<i>(megy)</i>	<i>újságot</i>		<i>(olvas)</i>	<i>okosnak</i>	<i>(tűnik)</i>
in	go	newspaper.ACC	read	clever.DAT	seem	
<i>úszni</i>	<i>(megy)</i>	<i>a</i>	<i>szobában</i>	<i>(marad)</i>		
swim.INF	go		the room.in	stay		

Sentences containing several auxiliaries display a variety of surface orders of the embedded infinitives. There is a contrast between neutral and non-neutral sentences. In neutral sentences only the English-type (straight) order is allowed, as (3) and (4) show.

- | | | | | | | | | |
|--|----|----|--|----|--|----|--|----|
| | VM | V1 | | V2 | | V3 | | V4 |
|--|----|----|--|----|--|----|--|----|
- (3) *Szét_i fogom akarni kezdeni szedni t_i a rádiót.*
 apart will.1SG.DEF want.INF begin.INF take.INF the radio.ACC
 'I will want to begin to take apart the radio.' (*akar* > *kezd*, **kezd* > *akar*)
- | | | | | | | | | |
|--|-----|----|--|----|--|----|--|----|
| | *VM | V1 | | V2 | | V4 | | V3 |
|--|-----|----|--|----|--|----|--|----|
- (4) a. **Szét fogom akarni szedni kezdeni a rádiót.*
 apart will.1SG.DEF want.INF take.INF begin.INF the radio.ACC
- | | | | | | | | | |
|--|-----|----|--|----|--|----|--|----|
| | *VM | V1 | | V4 | | V3 | | V2 |
|--|-----|----|--|----|--|----|--|----|
- b. **Szét fogom szedni kezdeni akarni a rádiót.*
 apart will.1SG.DEF take.INF begin.INF want.INF the radio.ACC

In non-neutral (focused and/or negative) sentences both the English and the inverted orders are grammatical. (5a) illustrates the English order.

- | | V1 | V2 | V3 | VM V4 | |
|-----|---|---------------------------|-----------------------------|-------------------------------------|--------------------------------|
| (5) | <i>MOST / Nem fogom</i>
now not will.1SG.DEF | <i>akarni</i>
want.INF | <i>kezdeni</i>
begin.INF | <i>szétszedni</i>
apart-take.INF | |
| | <i>a rádiót.</i>
the radio.ACC | | | | (* V1 V3 V2 VM V4) |
| a. | 'I will (not) want to begin to take apart the radio (NOW).' | | | | (<i>akar</i> > <i>kezd</i>) |
| b. | *I will (not) begin to want to take apart the radio (NOW).' | | | | (* <i>kezd</i> > <i>akar</i>) |

The inversion of infinitives is also optional in another respect: both a partial (6a) and a total roll-up structure (6b) are grammatical. While the rolling up can stop anywhere, it must start with the lowest infinitive, which can be observed from the possible scope relations between the infinitival auxiliaries in (5a, b).

- | | V1 | V2 | VM V4 | V3 | |
|--------|---|-------------------------------------|-------------------------------------|-----------------------------|---|
| (6) a. | <i>MOST / Nem fogom</i>
now not will.1SG.DEF | <i>akarni</i>
want.INF | <i>szétszedni</i>
apart-take.INF | <i>kezdeni</i>
begin.INF | |
| | <i>a rádiót.</i>
the radio.ACC | | | | (* V1 V3 VM V4 V2) |
| b. | <i>MOST / Nem fogom</i>
now not will.1SG.DEF | <i>szétszedni</i>
apart-take.INF | <i>kezdeni</i>
begin.INF | <i>akarni</i>
want.INF | |
| | <i>a rádiót.</i>
the radio.ACC | | | | (* V1 VM V4 V2 V3) |
| a, b. | 'I will (not) want to begin to take apart the radio (NOW).' | | | | (<i>akar</i> > <i>kezd</i> , * <i>kezd</i> > <i>akar</i>) |

In neutral sentences (see (3)) the finite auxiliary is preceded by a VM. This is obligatory, (7) is ungrammatical as a neutral sentence.

- | | *V1 | V2 | V3 | VM V4 | |
|-----|-------------------------------|---------------------------|-----------------------------|-------------------------------------|-----------------------------------|
| (7) | <i>*Fogom</i>
will.1SG.DEF | <i>akarni</i>
want.INF | <i>kezdeni</i>
begin.INF | <i>szétszedni</i>
apart-take.INF | <i>a rádiót.</i>
the radio.ACC |
| | | | | | (neutral) |

If the lowest infinitive has a VM, then this element will precede the finite auxiliary (3). The whole VM+V unit, on the other hand, cannot appear in this position (8).³

- | | | | | | |
|-----|--------------------------|--------------|----------|-----------|--------------------------|
| | *VM V4 | V1 | V2 | V3 | |
| (8) | *Szétszedni _i | fogom | akarni | kezdeni | t _i a rádiót. |
| | apart-take.INF | will.1SG.DEF | want.INF | begin.INF | the radio.ACC |
| | | | | | (neutral) |

As we have seen in (6), if the auxiliary is not finite, then the whole VM+V complex can move. As for the VM without the verb, there are two dialects in Hungarian, which are exemplified by (9). The dialect that does not allow the VM to move will be called Dialect 1. In the other dialect the VM can move optionally, so (5a), (9a) and (9b) are acceptable. This dialect will be called Dialect 2.⁴

- | | | | | | | |
|--------|---------------------|------------------|--------------------------|----------|-------------------|-----------|
| | | V1 | | V2 | VM | V3 |
| (9) a. | D ₁ : ?? | MOST / Nem fogom | | akarni | szét _i | kezdeni |
| | D ₂ : OK | now not | will.1SG.DEF | want.INF | apart | begin.INF |
| | | V4 | | | | |
| | | szedni | t _i a rádiót. | | | |
| | | take.INF | the radio.ACC | | | |
-
- | | | | | | | |
|----|---------------------|------------------|--------------------------|-------------------|----------|--------------------|
| | | V1 | | VM | V2 | V3 |
| b. | D ₁ : ?? | MOST / Nem fogom | | szét _i | akarni | kezdeni |
| | D ₂ : OK | now not | will.1SG.DEF | apart | want.INF | begin.INF |
| | | V4 | | | | (* V1 VM V3 V2 V4) |
| | | szedni | t _i a rádiót. | | | |
| | | take.INF | the radio.ACC | | | |
- a, b. 'I will (not) want to begin to take apart the radio (NOW).'
- (akar > kezd, *kezd > akar)

2.2 The dual behavior of VMs

At first sight the two phenomena discussed in 2.1 seem to conflict with each other. On the one hand, if the Head Movement Constraint is accepted and no exorporation is allowed, the long movement of the VM in neutral sentences (10) must be assumed to be an XP movement, so the VM should be analyzed as a phrase.

- | | | | | | | | |
|------|---|--------------|--|----------|-----------|----------|----------------------------------|
| | VM | V1 | | V2 | V3 | V4 | |
| (10) | Szét _i | fogom | | akarni | kezdeni | szedni | t _i a rádiót. (= (3)) |
| | apart | will.1SG.DEF | | want.INF | begin.INF | take.INF | the radio.ACC |
| | 'I will want to begin to take apart the radio.' (akar > kezd, *kezd > akar) | | | | | | |

On the other hand, the roll-up structure in non-neutral sentences (11) shows typical properties of head movement. Infinitives move strictly locally, which follows

from the fact that (11b) cannot have a direct scope reading. In addition, inversion cannot be derived by the movement of a constituent containing an English order, since in (11a) the first infinitival auxiliary in the linear order must have wider scope than the other one.

- (11) a.

V1	V2	VM V4	V3
<i>MOST / Nem fogom</i>	<i>akarni</i>	<i>szétszedni</i>	<i>kezdeni</i>
now not will.1SG.DEF	want.INF	apart-take.INF	begin.INF
<i>a rádiót.</i>			(* V1 V3 VM V4 V2)
the radio.ACC			(= (6a))
- b.

V1	VM V4	V3	V2
<i>MOST / Nem fogom</i>	<i>szétszedni</i>	<i>kezdeni</i>	<i>akarni</i>
now not will.1SG.DEF	apart-take.INF	begin.INF	want.INF
<i>a rádiót.</i>		(* V1 VM V4 V2 V3)	
the radio.ACC		(= (6b))	
- a, b. 'I will (not) want to begin to take apart the radio (NOW).'
(*akar* > *kezd*, **kezd* > *akar*)

The head movement analysis for (11) is also supported by the phenomenon demonstrated in (12) that some element can intervene between two infinitives only if they are not inverted:

- (12) a.

V1	V2	VM V4
<i>MOST / Nem fogom</i>	<i>akarni</i>	<i>(a rádiót) szétszedni</i>
now not will.1SG.DEF	want.INF	the radio.ACC apart-take.INF
V3		
(* <i>a rádiót</i>) <i>kezdeni</i> (<i>a rádiót</i>). begin.INF		
- b.

V1	VM V4
<i>MOST / Nem fogom</i>	<i>szétszedni</i> (* <i>a rádiót</i>)
now not will.1SG.DEF	apart-take.INF the radio.ACC
V3	
<i>kezdeni</i> (* <i>a rádiót</i>) <i>akarni</i> (<i>a rádiót</i>). begin.INF want.INF	
- a, b. 'I will (not) want to begin to take apart the radio (NOW).'
(*akar* > *kezd*, **kezd* > *akar*)

Now we got the result that both the VM and the VM+V unit should be analyzed as heads.⁵

The problem can be solved in three ways. If VMs are analyzed as heads, then long VM movement requires a non-trivial treatment, if they are analyzed as phrases, then the roll-up structure does. Finally, if an analysis is accepted that can capture the dual nature of VMs in some way, then the distinction between the two phenomena can be maintained.

The question is not decided by investigating further properties of verbal modifiers; there are a lot of arguments for both the head and the phrase analyses. Let us outline the most important ones of them. Since we will propose a dual analysis in this paper, we distinguish between two kinds of the arguments (called type A and type B). The arguments of type A exclude the possibility of the other analysis in any case; while the arguments of type B allow either analysis for a certain case.

I Evidence for a head analysis

[I A] *The VM must be a head, it cannot be a phrase*

[I A/1] *Coordination of the V+DP unit* (É. Kiss 1999). If the VM occupied a specifier position in some cases, the verb could form a constituent with its complements (similarly to the case of the focus), but this segment cannot be coordinated:

- (13) **János [szét [[vágta a rajzot] és [szedte a rádiót]]].*
 John apart cut.DEF the drawing.ACC and took.DEF the radio.ACC
 ‘John cut the drawing [apart] and took the radio apart.’

[I A/2] *NP constituents.* A nominal VM is a bare noun and not a full NP; a noun with an adjective or a possessor cannot serve as a VM in most cases.

[I B] *The VM can be a head*

[I B/1] *Head movement.* We argued that the inverted order of infinitives (11) should be generated by head movement (see above in detail).

[I B/2] *Coordination of the VM+V unit* (É. Kiss 1999). The unit containing the VM and the verb can be coordinated (14), which means that in this case the VM behaves as a head.

- (14) *János [[szét-szedte] és [össze-rakta]] a rádiót].*
 John apart-took.DEF and together-put.DEF the radio.ACC
 ‘John took apart and put together the radio.’

II Evidence for a phrase analysis

[II A] *The VM must be a phrase, it cannot be a head*

[II A/1] *DP constituents* (Koopman & Szabolcsi 2000). Some expressions are obviously phrases, for example: *a szobában* is a DP. This DP has the syntactic properties of VMs: it precedes the finite auxiliary in (15a), similarly to (3), and it follows the verb in negative sentences (15b), unlike focused elements.

- (15) a. *A szobában fogok maradni.*
 the room-in will.1SG stay.INF
 ‘I will stay in the room.’
 b. *A fiúk nem maradtak a szobában.*
 the boys not stayed.3PL the room-in
 ‘The boys didn’t stay in the room.’

[II B] *The VM can be a phrase*

[II B/1] *XP movement*. As was shown, VM climbing (10) is an example of phrasal movement (see above in detail).

[II B/2] *XP movement from a finite embedded clause*. Long movement of the VM is also possible from a finite embedded clause containing a phonologically realized complementizer *hogy*:

- (16) *Meg_i kell, hogy t_i csináljam.*
 PREV must that do.SUBJ.1SG.DEF
 ‘I must do it.’

[II B/3] *Non-neutral order*. If the VM obligatorily formed a complex head with the verb, the VM-less verb could never move further; but the verb immediately follows the focus or the negative element and precedes the VM in (finite) non-neutral sentences:

- (17) *Péter TEGNAP / nem ment haza / *haza-ment.*
 Peter yesterday not went home
 ‘Peter went home YESTERDAY / Peter didn’t go home.’

[II B/4] *Contrastive focus* (Kenesei 1989). A VM can be contrastively focused, occupying the [SPEC,FP] position:

- (18) *LE nézett* (, *nem FEL*).
 down looked not up
 'He looked DOWN (not UP).'

[II B/5] *Intermediate elements* (Koopman & Szabolcsi 2000). Even if the VM precedes the verb, the two are not necessarily adjacent: the negative marker *nem* and the emphatic *is* can appear between them.

It is obvious that for a head analysis the arguments in II, for a phrase analysis the arguments in I, and for a dual analysis the arguments of type A are required to be disproved. I will return to these arguments in 7.1.

It seems to me that both the head and the phrase analyses are forced to use too strong theoretical devices, which should be restricted or eliminated, if possible. Without providing details of the previous analyses, we mention a few of their basic ideas. Head movement is assumed to be less restrictive in Csirmaz (1998, this volume), allowing excorporation in certain cases and in Dalmi (1999), allowing long head movement. The head analysis of É. Kiss (1999) introduces reanalysis, which is applied in an OV-based approach by Ackema (this volume). As for the phrase analyses, in order to avoid the problems of phrasal roll-up structures, Koopman and Szabolcsi (2000) develop a mechanism based on remnant movement,⁶ while Alberti (2001, this volume) resorts to extraposition.

All things considered, the dual analyses seem to be the least implausible. The most simple solution for this is provided by mirror theory (Brody 1997, 2000), in which heads and phrases are not distinguished from each other, so the assumption that inverted infinitives form a morphological word, while VM climbing involves a chain, does not create any problem (Brody 1997, this volume). Bartos (1999, this volume) proposes an alternative morphological treatment for roll-up structures by the operation of morphosyntactic merger. In this paper I try to develop a dual analysis in the standard minimalist theory.

3. Basic assumptions

As a starting-point let us accept that the verbal modifier (a phrase projected by a lexical head) is base generated as a complement of the verb. This is compatible with every type of analyses: the VM will behave as a phrase if its head cannot be incorporated into the verb and it will behave as a head if incorporation is obligatory. I assume that incorporation of the VM head is an optional operation, which results in the dual behavior of VMs.^{7, 8}

As is well known, the position of the VM correlates with the aspect of the sentence. If the VM does not precede the verb in a neutral sentence, then the sentence obligatorily gets a progressive reading:⁹

- (19) a. *Fel-ment / *ment fel a lépcsőn.*
 up went the stair-on
 ‘He went upstairs.’
 b. *(Éppen) ment fel a lépcsőn (, amikor kinyílt az ajtó).*
 just went up the stair-on when out-opened the door
 ‘He was (just) going upstairs (when the door opened).’

Considering this fact, I suppose that verbal modifiers have an aspectual feature. This means that a complement of the verb will be taken as a verbal modifier if and only if it has an aspectual feature required by the lexical selection of the verb. I assume that the VM checks its aspectual feature against the functional head of TP.¹⁰ The AspP projection introduced in Piñón (1995), Alberti (2001, this volume) and É. Kiss (2002, this volume) is not necessary for my proposals. I assume further that in the case of lexical verbs not having a VM the aspectual feature of T is checked by the verb. In Section 6 I will argue that auxiliaries do not have an aspectual feature, moreover, they do not require their infinitival complements to have an aspectual feature, in other words, the infinitival complement of an auxiliary cannot be regarded as a verbal modifier of the auxiliary.

As an example, let us take the VM+V in (20).

- (20) *levelet ír(ni)*
 letter.ACC write(.INF)

If the VM is not incorporated (21a), it moves into [SPEC,TP] by XP movement (21b) and it checks its aspectual feature in this position.

- (21) a. $[_{VP} [_{V'} \textit{ír(ni)}_k [_{NP} \textit{levelet}]_i]]$
 b. $[_{TP} [_{NP} \textit{levelet}]_i [_{T'} \textit{ír(ni)}_k [_{VP} [_{V'} t_k t_i]]]]$

If the VM is incorporated (22a), then the VM+V complex head moves to the head of TP (22b). In this case the VM checks its aspectual feature in a head-adjoined position, which is a part of the checking domain of a functional head by the definition of Chomsky (1995).

- (22) a. $[_{VP} [_{V'} [\textit{levelet}_j \textit{ír(ni)}_k]_l [_{NP} [_{N'} t_j]]]]$
 b. $[_{TP} [_{T'} [\textit{levelet}_j \textit{ír(ni)}_k]_l [_{VP} [_{V'} [t_j t_k]_l [_{NP} [_{N'} t_j]]]]]]$

The VM always moves overtly in neutral, non-progressive sentences, not only in finite but in infinitival ones, illustrated by (23).

- (23) *Nem akarok haza-menni / *menni haza.*
 not want.1SG home-go.INF
 'I don't want to go home.'

So we suppose that the T head has a strong aspectual feature, independently from our assumptions on the tense feature of T. (We will examine the strength of the tense feature of the infinitival T in Section 4 and the position of the VM in non-neutral sentences in Section 5.)

We mention two phenomena where we cannot adopt the standard explanation without any modification. First, it is not possible that more than one VMs precede the verb in a neutral sentence. Second, the climbing of the VM of the lowest infinitive is blocked by the presence of another VM:

- (24) **Szét_i fogom el-kezdeni szedni t_i a rádiót.*
 apart will.1SG.DEF PREV-begin.INF take.INF the radio.ACC

Assuming that a VM moves by successive cyclic movement, the earlier analyses accounted for both phenomena in a simple way, since two elements cannot occupy the same position. In a dual analysis there are two positions for a VM: the specifier and the head of TP. Nevertheless, the solution of a dual analysis will not be more disadvantageous; since even in a phrase analysis we have to suppose that TP cannot have multiple specifiers and this additional constraint can be extended to the head-adjoined position. So we assume that the functional head of TP can check its aspectual feature with only one element, which will exclude the two cases above in a dual analysis as well.

Our assumption that a VM can be incorporated optionally is supported by infinitival non-neutral sentences. As will be shown in the next section, the VM can occupy two linear order positions in them, depending on whether it was incorporated or not. We can observe a similar phenomenon in Dutch: the VM can precede either the lowest verb (25a) or the finite auxiliary (25b). According to the analysis of Koster (1994), in (25a) the VM (*schoon*) is incorporated into the verb, while in (25b) the phrasal VM moves to the specifier of the PredP projection dominating VP.

- (25) a. ... *omdat hij het raam heeft willen schoon maken.*
 because he the window has want.INF clean make.INF
 b. ... *omdat hij het raam schoon heeft willen maken.*
 because he the window clean has want.INF make.INF
 a, b. '... because he wanted to clean the window.'

To sum up, our basic assumptions are the following:

- (26) a. Verbal modifiers have an aspectual feature.
- b. The lexical verbs not having a VM have an aspectual feature.
- (27) a. T has an aspectual feature.
- b. The aspectual feature of T is strong.

4. Inverted order verbal complexes

In this section we deal with the sentences in which the order of infinitives is inverted. In 4.1 we examine why infinitival heads are required to move in these cases. In 4.2 we attempt to explain the contrast between finite and infinitival auxiliaries and some other properties of roll-up structures.

4.1 The Syntactic Light Verb Constraint

We analyze infinitival inversion (6) by head movement, and VM climbing (3) by XP movement. We will show that both the type of movement and the moving elements and the trigger of movement are different in these two cases, so we will treat inversion and VM climbing as two different syntactic phenomena. (This is reflected in two previous analyses: É. Kiss (1999) assumes that these two phenomena are motivated by two independent constraints and Brody (1997, this volume) distinguishes [+VM] and [+prefix] features.)

Let us turn to the trigger of inversion. Since a sentence can contain any number of infinitival auxiliaries, including that it does not contain any of them, what forces the infinitival head to move is a property of the auxiliary selecting the infinitive (and not a property of the infinitive). Auxiliaries are syntactically defective in some sense: they must form a complex verb with a non-auxiliary. As a generalization of this, we will distinguish two classes of verbs: syntactic light and non-light verbs. Syntactic light verbs have a TP complement. A syntactic light verb requires a non-light verb to be in some special relation with it, namely, an infinitival non-light verb and a light verb form a complex verb, which qualifies as a non-light verb and it can serve as an input for further complex verb formation. At this point we assume that syntactic light verbs are marked in the lexicon, and the question of how this property can be derived from some more simple properties remains for further research.¹¹ We suppose that auxiliaries are syntactic light verbs; we will return to non-auxiliaries and a few other questions in 7.2. We adopt the Syntactic Light Verb Constraint of É. Kiss (1999) in this form:

- (28) SYNTACTIC LIGHT VERB CONSTRAINT
- A syntactic light verb must form a complex predicate with a non-light verbal head.
- (V₁ + V₂ → [V₃ V₁ V₂])
- [-light] [+light] [-light]

4.2 The Complex Head Constraint

Accepting the hypothesis above, we would expect complex verb formation to be obligatory. But it is optional in the case of infinitival auxiliaries: we have seen that English order (5a), partial (6a) and total roll-up (6b) are possible as well.¹² What is more, finite auxiliaries cannot form a complex verb with a non-auxiliary: in a neutral sentence neither a complex (29) nor a non-complex infinitival head (30) can move into the matrix clause.

- *VM V4 V3 V2 V1

(29) **Szétszedni kezdeni akarni fogom a rádiót.*

apart-take.INF begin.INF want.INF will.1SG.DEF the radio.ACC

(neutral)
- *V2 V1 V3 VM V4

(30) a. **Akarni_i fogom t_i kezdeni szétszedni a rádiót.*

want.INF will.1SG.DEF begin.INF apart-take.INF the radio.ACC

(neutral)
- *V2 V1 VM V4 V3

b. **Akarni_i fogom t_i szétszedni kezdeni a rádiót.*

want.INF will.1SG.DEF apart-take.INF begin.INF the radio.ACC

(neutral)

If an infinitive precedes the finite auxiliary, it can be generated only by phrasal movement, because this movement is not strictly local:

- (31) *Úszni_i fogok akarni t_i.* (neutral)
- swim.INF will.1SG want.INF
- ‘I will want to swim.’

Let us sum up the properties of complex verb formation to be accounted for: there is a contrast between finite and infinitival clauses and a phenomenon of optionality in infinitival ones. We can observe the same things with respect to the relative order of the verb and the VM in non-neutral sentences: in a finite non-neutral sentence

the verb must precede the VM (32a, b), while in an infinitival one both linear orders are grammatical (33a, b).

- (32) a. **JÁNOST fel-hívtam.*
 John.ACC up-called.1SG.DEF
 b. *JÁNOST hívtam fel.*
 John.ACC called.1SG.DEF up
 a, b. 'I called up JOHN.'
- (33) a. *Jobb lenne JÁNOST fel-hívni.*
 better would-be John.ACC up-call.INF
 b. *Jobb lenne JÁNOST hívni fel.*
 better would-be John.ACC call.INF up
 a, b. 'It would be better to call up JOHN.'

We try to give a common explanation for these two phenomena. In accordance with Brody (1990, 1995) and É. Kiss (1998), let us assume that in finite non-neutral sentences the verb moves into a higher position, namely, into the head of FP or NegP, triggered by the strong V-feature of these functional heads. In Section 5 we will argue for this analysis. For the contrast between the finite (32) and the infinitival clause (33) the solution in Brody (1995) suggests that the finite T has a strong V-feature, and the infinitival T has an optionally strong/weak one. However, this assumption is not sufficient for the analyses in which the VM can be incorporated into V. So as to rule out the VM V order in a finite sentence (32a) we suppose that the finite T cannot tolerate complex heads: the head that is adjoined to T overtly must be non-branching. Our proposal is that it is this property of the finite T that is optional in the case of the infinitival T. If the strength of the feature of the infinitival T were optional, it would be possible that the VM occupies [SPEC,TP] and the verb does not move overtly to T, whereas no constituent can intervene between them.¹³ Furthermore, the infinitival multiple focus construction (34) could not be derived maintaining the idea of FP recursion from É. Kiss (1998).

- (34) *Jobb lenne PÉTERT meghívni KÉT NAPRA (, és*
 better would-be Peter.ACC PREV-invite.INF two day-onto and
 JÁNOST HÁROMRA).
 John.ACC three-onto
 'It would be better to invite PETER FOR TWO DAYS (and JOHN FOR THREE DAYS).'

Accordingly, we will accept the following assumptions on the T head:^{14, 15}

- (35) T has a strong [Tense] feature.

(36) COMPLEX HEAD CONSTRAINT

- a. The finite T does not allow a complex head to be adjoined to it.
(fin. T: -CH)
- b. The infinitival T optionally has the property in (36a). (inf. T: +/-CH)

Let us see the structures of the sentences discussed. In (37a) the VM is incorporated and then the VM+V complex head moves into F through T – provided it allows this, otherwise the derivation will crash – so we get the sentence (33a). In (37b) the VM is not incorporated, it moves into [SPEC,TP] and the verb moves into the head of FP – like in finite sentences –, generating (33b).¹⁶

- (37) a. [_{FP} *Jánost_m* [_F [*fel_j hívní_k*]_I] [_{TP} [_T *t_i*] [_{VP} [_V [*t_j t_k*]_I] [_{AdvP} [_{Adv} *t_j*]_I]
t_m]]]]]]]
+CH
- b. [_{FP} *Jánost_m* [_F *hívni_k*] [_{TP} *fel_i*] [_T *t_k*] [_{VP} [_V *t_k t_i t_m*]]]]]]]

Turning to complex verb formation, infinitival heads can adjoin to T overtly if and only if it allows this: complex verb formation with a finite auxiliary is prohibited by the first part of the Complex Head Constraint (36a), and if the auxiliary is infinitival, complex verb formation will be optional due to the second part of the Complex Head Constraint (36b).¹⁷ We point out that this does not imply the ungrammaticality of the sentences in which the finite verb is preceded by an infinitival cluster (29) or a single infinitive (30a, b), because in this section only head movement is concerned, while the possibility of XP movement will be excluded in the next section. As for complex verb formation with an infinitival auxiliary, if all infinitival T heads tolerate complex heads (38), then we obtain total inversion (6b); if only the highest T head does not allow the adjunction of a complex head (39), then partial inversion (6a) is generated. In all the other cases (40), we will get the English order (5a).¹⁸

- (38) a. [_{TP} [_{VP} *akarni_i*] [_{TP} [_{VP} *kezdeni_j*] [_{TP} [_{VP} *szétszedni_k* ...
+CH +CH +CH]
b. [_{TP} [[*szétszedni_k [kezdeni_j]*]_j *akarni_i*] [_{VP} *t_{i[j[k]]}*] [_{TP} *t_{j[k]}*] [_{VP} *t_{j[k]}*] [_{TP} *t_k*
[_{VP} *t_k*...]
- (39) a. [_{TP} [_{VP} *akarni_i*] [_{TP} [_{VP} *kezdeni_j*] [_{TP} [_{VP} *szétszedni_k* ...
-CH +CH +CH]
b. [_{TP} *akarni_i*] [_{VP} *t_i*] [_{TP} [*szétszedni_k [kezdeni_j]*]_j] [_{VP} *t_{j[k]}*] [_{TP} *t_k*] [_{VP} *t_k*...]
- (40) a. [_{TP} [_{VP} *akarni_i*] [_{TP} [_{VP} *kezdeni_j*] [_{TP} [_{VP} *szétszedni_k* ...
-CH +CH]
b. [_{TP} *akarni_i*] [_{VP} *t_i*] [_{TP} *kezdeni_j*] [_{VP} *t_j*] [_{TP} *szétszedni_k*] [_{VP} *t_k* ...]

- (44) a. *Nem fogok akarni úszni kezdeni.*
 not will.1SG want.INF swim.INF begin.INF
 b. *Nem fogok akarni kezdeni úszni.*
 not will.1SG want.INF begin.INF swim.INF
 a, b. 'I will not want to begin to swim.'

In (43a) the VM has to move into TP in order to check the aspectual feature of T (26a), (27a) and this movement is obligatorily overt because of the strong aspectual feature of the T head (27b). The VM can move by either head movement or XP movement, hence, it will precede the verb in any case. But in (44) the infinitive has to move by head movement and it can move overtly and form a complex verb with the auxiliary only if the higher infinitival T allows the adjunction of a complex head, so both (44a) and (44b) can be derived depending on the optional property of the infinitival T head formulated by the Complex Head Constraint (36). This makes the prediction that a non-auxiliary having an infinitival VM is preceded by the VM – similarly to (43) – unless the sentence has a progressive reading. This prediction is supported by (45): comparing (45b) with either (45a) or (44b), there is a clear contrast.²⁰

- (45) a. *Nem fogok akarni úszni tanulni.*
 not will.1SG want.INF swim.INF learn.INF
 b. *??Nem fogok akarni tanulni úszni.*
 not will.1SG want.INF learn.INF swim.INF
 a, b. 'I will not want to learn to swim.'

The Complex Head Constraint (36) may play a role in roll-up phenomena of some other languages. In German, finite and infinitival auxiliaries behave in the same way as in Hungarian: we can observe from (46a) that total inversion of infinitives is possible like in (6a); but similarly to (29), a finite auxiliary cannot be preceded by any infinitives, showed by (46b).

- | | V1 | VM | V4 | V3 | V2 |
|---------|------|---|----------------------|----------------------|------------------|
| (46) a. | ... | <i>dass er hätte</i> | <i>herein kommen</i> | <i>wollen</i> | <i>können.</i> |
| | | that he had | in | come.INF | want.INF can.INF |
| | | '... that he could have wanted to come in.' | | | |
| * | | VM | V4 | V3 | V2 V1 |
| b. | *... | <i>dass er herein kommen</i> | <i>wollen</i> | <i>können hätte.</i> | |
| | | that he in | come.INF | want.INF | can.INF had |

Since in some languages infinitival inversion is not allowed, the Complex Head Constraint on the infinitival T head (36b) seems to be language-specific. It may interact with the head-initial/head-final parameter in various ways. Moreover, the

question arises whether the Complex Head Constraint on the finite T head (36a) is universal. These problems are left for future research.

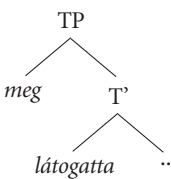
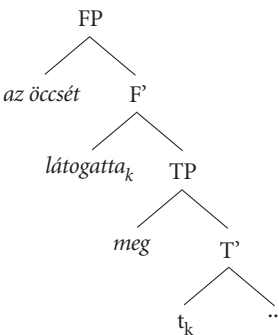
In this section we analyzed the inverted order of infinitives by a head movement required by the Syntactic Light Verb Constraint. We argued that the contrast between finite and infinitival clauses – with respect to both the non-neutral order of the verb and the VM and inversion of infinitives – are explained by the Complex Head Constraint. We showed further that several properties of infinitival inversion follow from our proposed analysis.

5. Verbal complexes with VM climbing

In this section we will examine the syntactic behavior of the VM. It is a well-known fact that in Hungarian finite neutral and non-neutral sentences have different linear orders: in neutral sentences the VM precedes the verb (47a), while in non-neutral sentences the verb precedes the VM (47b).

- (47) a. *Mari meg-látogatta az öccsét.*
 Mary PREV-visited.3SG.DEF the brother.3SG.ACC
 ‘Mary visited her brother.’
 b. *Mari AZ ÖCCSÉT látogatta meg.*
 Mary the brother.3SG.ACC visited.3SG.DEF PREV
 ‘Mary visited HER BROTHER.’

This can be generated either by movement of the VM in neutral sentences or by movement of the verb in non-neutral sentences. The proposal we accepted in Section 4 was based on verb movement. This section will provide some evidence for this analysis. The sentences in (47a) and (47b) will be represented by the structures in (48a) and (48b), respectively:

- (48) a.  b. 

Nevertheless, we will analyze the neutral (49a) and non-neutral (49b) sentences containing a finite auxiliary in another way.

- (49) a. *Mari meg fogja látogatni az öccsét.*
 Mary PREV will.3SG.DEF visit.INF the brother.3SG.ACC
 ‘Mary will visit her brother.’
 b. *Mari AZ ÖCCSÉT fogja meg-látogatni.*
 Mary the brother.3SG.ACC will.3SG.DEF PREV-visit.INF
 ‘Mary will visit HER BROTHER.’

We claim that VM movement is a phenomenon related to the distinction between lexical verbs and auxiliaries. Accordingly, we will distinguish between two cases of VM movement: short and long VM movement. In the former the VM moves into a clause-mate position immediately preceding the verb selecting it; while in the latter the VM moves into a higher clause containing an auxiliary, which must be finite in Dialect 1. (50) illustrates the structure of a fragment of (49a).

- (50) $[_{TP} meg_i [_{T'} fogja_j [_{VP} t_j [_{TP} t_i [_{T'} látogatni_k [_{VP} t_k t_i \dots$
-
- long VM movement short VM movement

In 5.1 we will see that the VM moves into the matrix TP only in neutral sentences (49a); it remains in its own clause if the matrix clause is non-neutral (49b). We will show further that this long movement is triggered by a constraint formulating a special phonological property of auxiliaries. In 5.2, examining short VM movement, we will argue that in both neutral and non-neutral sentences the VM obligatorily moves into TP forced by the checking of the aspectual feature (26), (27).

5.1 The VM and the auxiliary: Long VM movement

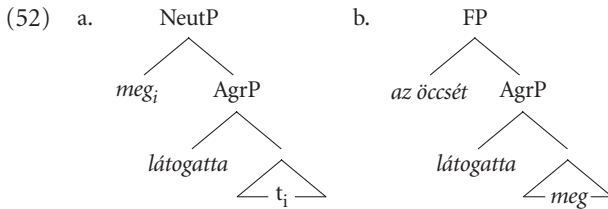
5.1.1 *The non-neutral position of the VM*

Now we focus our attention on the contrast between neutral and non-neutral sentences, especially the non-neutral position of the VM. Koopman and Szabolcsi (2000) provide an analysis radically different from what we outlined. They argue in the following way. If a non-neutral sentence contains more than one auxiliary, the VM precedes its own verb, the lowest infinitive (51a). If the VM moved into the matrix clause, it would precede all the infinitives (51b), but this order is not acceptable (at least in Dialect 1).

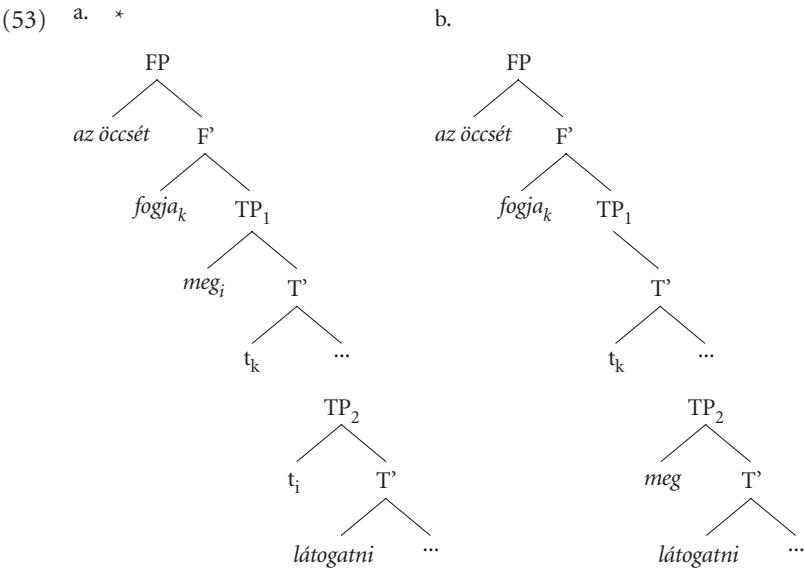
- (51) a. *Mari AZ ÖCCSÉT fogja akarni meg-látogatni.*
 Mary the brother.3SG.ACC will.3SG.DEF want.INF PREV-visit.INF
 ‘Mary will want to visit HER BROTHER.’

- b. D₁: ?? *Mari AZ ÖCCSÉT fogja meg akarni látogatni.*
 D₂: OK Mary the brother.3SG.ACC will.3SG.DEF PREV want.INF
 visit.INF
 ‘Mary will want to visit HER BROTHER.’

Koopman and Szabolcsi (2000) are led to the conclusion that in neutral sentences the VM moves into a higher position than it occupies in non-neutral ones. They assume that in neutral sentences – and only in them – a special projection, NeutP is present in the structure, which is the target of VM movement. The question arises about the independent motivation for this projection and this movement. É. Kiss (2002, this volume) claims that focus and negation obligatorily neutralize aspect, which would mean that NeutP becomes identical with AspP. Anyway, in Koopman and Szabolcsi (2000) (47a) and (47b) will have the following structural representations:



I think what follows from the examples in (51) is that long movement of the VM is restricted to the case of neutral matrix sentences. The VM does not move into the TP of a non-neutral matrix clause; it remains in the lowest TP in Dialect 1, while it can move into a higher embedded TP in Dialect 2. However, (51) gives no evidence with respect to short VM movement, which needs to be distinguished from the long one. This means that we are not forced to reject (48b) – what is more, we will argue for this structure in 5.2 –, but the analogous structure derived from (50a) by movement of the finite verb to F is not correct (53a), we should accept (53b) for (49b) and (51a).



This result is confirmed by the facts related to intermediate elements: if in a non-neutral sentence the VM occupied the same position as in a neutral one, then we would obtain (54b), which is ungrammatical, unlike (54c).

- (54) a. *Holnap meg fogja Mari az öccsét*
tomorrow PREV will.3SG.DEF Mary the brother.3SG.ACC
látogatni.
visit.INF
‘Tomorrow Mary will visit her brother.’
- b. **Holnap nem fogja meg Mari az öccsét*
tomorrow not will.3SG.DEF PREV Mary the brother.3SG.ACC
látogatni.
visit.INF
- c. *Holnap nem fogja Mari az öccsét*
tomorrow not will.3SG.DEF Mary the brother.3SG.ACC
meg-látogatni.
PREV-visit.INF
‘Tomorrow Mary will not visit her brother.’

(55) shows in a similar way that the VM is found in an embedded clause even in Dialect 2.

- (55) a. D₂: OK *Nem fogja Mari az öccsét meg akarni látogatni.*
 not will.3SG.DEF Mary the brother.3SG.ACC PREV
 want.INF visit.INF
 ‘Mary will not want to visit her brother.’
- b. D₂: **Nem fogja meg Mari az öccsét akarni látogatni.*
 not will.3SG.DEF PREV Mary the brother.3SG.ACC
 want.INF visit.INF

5.1.2 The Phonological Light Verb Constraint

Let us look at the question of how long VM movement can be motivated in our analysis. In the case of long VM movement the aspectual feature of the finite T is checked by the VM. Since the VM moves by successive cyclic movement, it checks the aspectual features of the intermediate infinitival T heads as well. But for both the VM and the higher T heads the aspectual features can be checked if no long VM movement is applied. The aspectual feature of the VM is checked in the TP of the most deeply embedded clause, in which the VM was base generated. On the other hand, the VM does not move into a non-neutral sentence, as we have just seen. Moreover, the VM moves obligatorily into a finite neutral clause (56), while into an infinitival one it does not move in Dialect 1 and it optionally moves in Dialect 2 (57a, b). (The assumption that only the finite T has a strong aspectual feature fails to explain this, because – as was already seen in Section 3 – short VM movement is obligatory in both finite and infinitival clauses (23), (57 b, c).)

- (56) a. *Be akarok menni.* (neutral)
 in want.1SG go.INF
 ‘I want to go in.’
- b. **Akarok be-menni.* (neutral)
 want.1SG in-go.INF
- (57) a. D₁: ?? *Nem fogok be akarni menni.*
 D₂: OK not will.1SG in want.INF go.INF
 ‘I will not want to go in.’
- b. *Nem fogok akarni be-menni.* (= (43a))
 not will.1SG want.INF in-go.INF
- c. **Nem fogok akarni menni be.* (= (43b))
 not will.1SG want.INF go.INF in

A constraint is wanted that forces long VM movement in the sense that it would be violated – and so the derivation would crash – if the VM did not move. Long VM

A phonological light verb cannot bear phrasal stress.

In non-neutral sentences phrasal stress falls on the focus or the negative marker. The Phonological Light Verb Constraint (58) is satisfied, so in order to get a convergent derivation the VM is not forced to move in them. In neutral sentences, if the auxiliary is finite, then the VM is required to move by the Phonological Light Verb Constraint (58). In the case of infinitival auxiliaries the constraint can be satisfied in another way, since VM climbing is not obligatory. Szendrői (this volume) states that an infinitival VP containing an auxiliary can form a single intonational phrase with the finite VP and supposes that this process is obligatory in Dialect 1 and optional in Dialect 2. Thus we obtain the difference between the two dialects without any other assumption: VM climbing is allowed in Dialect 2, but it is unnecessary – so not involved – in Dialect 1. The structure of the possible sentences in Dialect 2 (5), (9a), (9b) are represented by (59), (60), and (61), respectively.

- [illegible]

The question arises whether a non-auxiliary can be a phonological light verb. In our analysis this question is irrelevant, the main point is that only long VM move-

ment is triggered by the Phonological Light Verb Constraint (58), while short VM movement is triggered by the checking of the aspectual feature, as will be seen. Contrary to this, assuming that not only auxiliaries but the lexical verbs having a VM also fall under phonological light verbs, Csirmaz (1999) and Dalmi (1999) claim that VM movement is always forced phonologically. Before turning to the case of non-auxiliaries we remark that by a PF requirement we could not explain why the V VM order in (62a) is ungrammatical, whereas the verb is also preceded by an infinitive in (62b) (and the VM is also sentence-final in (47b)).

- (62) a. **Nem fogok akarni menni be.* (= (43b))
 not will.1SG want.INF go.INF in
 ‘I will not want to go in.’
 b. *Be fogok akarni menni.*
 in will.1SG want.INF go.INF
 ‘I will want to go in.’

The notion of movement triggered by a phonological constraint can be interpreted in several ways. We keep to the following approach. Phonological rules cannot change the linear order. Movement is an operation of the syntactic component restricted by syntactic constraints. We accept most of the standard minimalist assumptions on movement (Chomsky 1995), including the final version of the Last Resort condition; thus we maintain that the operation Move is driven by feature checking as a part of its definition. In our approach movement triggered by a phonological constraint means that the derivation without this movement would crash at PF (not at LF). The phenomenon of VM climbing supports this view: in 6.1 we will see that the well-formed sentences must satisfy both the conditions on Move operation and the Phonological Light Verb Constraint.²³ The question of which constituent can precede the finite auxiliary is determined by syntactic factors. What the Phonological Light Verb Constraint (58) requires is that the finite auxiliary should be preceded by some stressed element; but this element is not specified by the constraint, for example, any of DP complements would be allowed. Moreover, the different behavior of infinitives cannot be explained phonologically: a VM-less non-auxiliary can precede the finite auxiliary (63a), but the other types of infinitives cannot (we find a non-auxiliary having a VM with its VM in (63b) and without it in (63c) and an auxiliary in (63d)).

- (63) a. *Úszni_i fogok akarni t_i.* (neutral)
 swim.INF will.1SG want.INF
 ‘I will want to swim.’
 b. **Haza-menni_i fogok akarni t_i.* (neutral)
 home-go.INF will.1SG want.INF

- c. **Menni_i fogok akarni haza t_i.* (neutral)
 go.INF will.1SG want.INF home
- d. **Akarni_i fogok t_i haza-menni.* (neutral)
 want.INF will.1SG home-go.INF
- b, c, d. 'I will want to go home.'

5.2 The VM and the lexical verb: Short VM movement

We have got the result that long VM movement is subject to the Phonological Light Verb Constraint (58) and it is not involved in a non-neutral sentence. In this section we will see that short VM movement has to be distinguished from the long one. As we will show, in the sentences containing a finite main verb the VM obligatorily moves into TP, not only in neutral but in non-neutral sentences as well. Consequently, we maintain that short VM movement is required by the checking of the aspectual feature (26), (27). This means that we will argue against the analyses in which the contrast between the surface order of the neutral (47a) and the non-neutral sentence (47b) is derived from the movement of the VM in the neutral sentence. As we have seen, such a movement can be motivated in several ways: Koopman and Szabolcsi (2000) introduce the NeutP projection, É. Kiss (2002, this volume) assumes that the AspP projection appears only in neutral sentences and Dalmi (1999) proposes a PF requirement extended to non-auxiliaries.

Examining infinitival non-neutral clauses, we show how the relative order of the VM and the verb in them support both the hypothesis of verb movement and the distinction between auxiliaries and non-auxiliaries. As we have seen, in infinitival non-neutral clauses (64a), unlike in finite ones (64b), the verbal modifier can (optionally) precede the verb:

- (64) a. *Jobb lenne JÁNOST felhívni.* (= (33a))
 better would-be John.ACC up-call.INF
 'It would be better to call up JOHN.'
- b. **JÁNOST felhívtam.* (= (32a))
 John.ACC up-called.1SG.DEF
 'I called up JOHN.'

This phenomenon suggests that the finite and the infinitival T heads have different properties, a fact that was captured by the Complex Head Constraint (36a, b), supposing that the verb moves in non-neutral sentences (48). (The structure of (64a) is represented in (37a).) Alternatively, if we assume (similarly to Koopman & Szabolcsi 2000; É. Kiss 2002, this volume or Dalmi 1999) that the VM moves into a higher position in neutral sentences (52), it is not clear what forces the VM to move in a non-neutral sentence (64a) and why it cannot do so in the finite

case (64b). The asymmetry between infinitival auxiliaries (64a) and non-auxiliaries (65) is even more problematic for this type of the analyses; we would not expect it if VM movement had the same motivation in every case. Let us have a look at this phenomenon. In Dialect 2 VM climbing is allowed in neutral sentences (9). But it is impossible in non-neutral sentences even in Dialect 2, exemplified by (65):²⁴

- (65) D₂: **Jobb lenne JÁNOST fel akarni hívni.*
 better would-be John.ACC up want.INF call.INF
 ‘It would be better to want to call up JOHN.’

We can explain this contrast assuming that short VM movement is forced by the checking of the aspectual feature (26), (27), so the VM will move into TP in both neutral and non-neutral sentences. On the other hand, in 5.1 we concluded that long VM movement is required by the Phonological Light Verb Constraint (58), hence the VM will not move in non-neutral sentences owing to the presence of a stressed element, as in finite clauses. Anyway, we can rule out (65) without examining the trigger of movement: in Section 4 we suggested that the verb obligatorily moves into F in both finite and infinitival sentences. According to this analysis, in (65) there is no SPEC position intervening between the focus and the verb for the VM, which would move by XP movement in this case. The contrast between infinitival VM climbing (65) and inversion (66) confirms that the latter should be analyzed by head movement, the trigger of which is not a phonological requirement.²⁵

- (66) *Jobb lenne JÁNOST fel-hívni akarni.* (= (41b))
 better would-be John.ACC up-call.INF want.INF
 ‘It would be better to want to call up JOHN.’

In Section 5 it was shown that long VM movement is possible if and only if the matrix verb is an auxiliary and the matrix clause is neutral; while short VM movement is implemented in both neutral and non-neutral sentences. We have seen that the Phonological Light Verb Constraint (58) can account for this fact, as well as the difference between the two dialects. On the other hand, we argued that short VM movement is triggered by feature checking and infinitival non-neutral clauses give some evidence for verb movement in non-neutral sentences.

6. Verb typology based on the aspectual feature

In this section we analyze some further examples showing the contrast between lexical verbs and auxiliaries. In 6.1 we will examine the question of which element moves into the position preceding the finite auxiliary in neutral sentences and ar-

gue that neither an auxiliary nor its complement has an aspectual feature. In 6.2 we deal with stative verbs, and then we show how the verb classes discussed can be characterized by means of the aspectual feature.

6.1 Auxiliaries are aspectually defective

Let us compare auxiliaries and lexical verbs selecting an infinitival VM. As is well known, long VM movement is a typical phenomenon of auxiliaries. First, let us take the simplest case: if the infinitival complement of an auxiliary has a VM, then the VM will precede the finite auxiliary (67a). In a neutral sentence the whole infinitival VM+V cannot appear in this position (67b).

- (67) a. *János elő fogja adni az elméletét.* (neutral)
 John PREV will.3SG.DEF give.INF the theory.3SG.ACC
 'John will present his theory.'
- b. **János elő-adni fogja az elméletét.* (neutral)
 John PREV-give.INF will.3SG.DEF the theory.3SG.ACC

In the case of a lexical verb, if its infinitival VM is a verb having a VM, then the whole infinitival VM+V is followed by the finite verb (68a); non-auxiliaries cannot separate the VM and its own verb (68b).

- (68) a. *Péter elő-adni tanul.* (neutral)
 Peter PREV-give.INF learn
 'Peter learns to give a presentation.'
- b. **Péter elő tanul adni.* (neutral)
 Peter PREV learn give.INF

However, the generalization that a finite auxiliary cannot be preceded by an infinitival VM+V would be incorrect, even descriptively. In sentences containing more than one infinitive we can observe the following interesting contrast between auxiliaries and non-auxiliaries. If the lowest infinitival VM+V (*lemászni*) is a complement of an auxiliary (*kezdeni*) – as known from (3), (8) –, it is the VM that moves into the matrix sentence (69a), the VM+V cannot do so (69b):

- | | | | | | | |
|---------|-------------------|------------|---------------|-----------------|----------------|-----------|
| | VM(4) | V1 | V2 | V3 | V4 | |
| (69) a. | <i>Le</i> | <i>fog</i> | <i>akarni</i> | <i>kezdeni</i> | <i>mászni.</i> | (neutral) |
| | down | will | want.INF | begin.INF | climb.INF | |
| | *[VM(4) V4] | | V1 | V2 | V3 | |
| b. | <i>*Le-mászni</i> | <i>fog</i> | <i>akarni</i> | <i>kezdeni.</i> | | (neutral) |
| | down-climb.INF | will | want.INF | begin.INF | | |
- a, b. 'He will want to begin to climb down.'

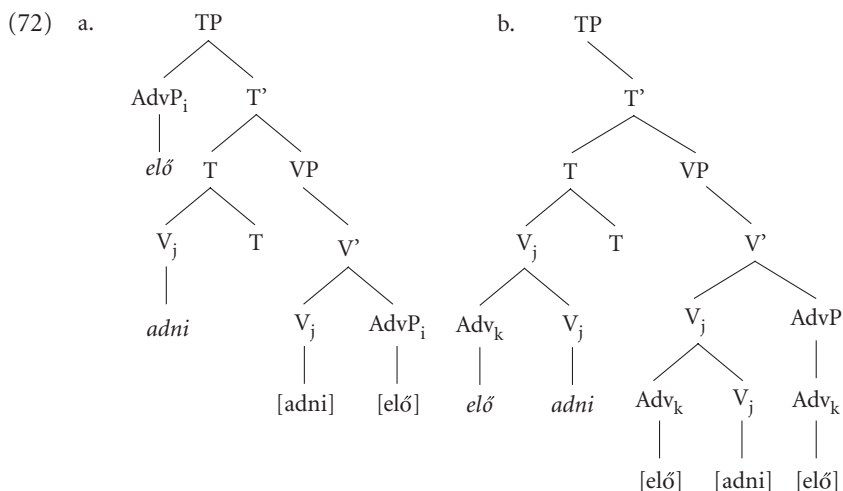
On the other hand, in the sentences under (70) the lowest verb (*inni*) has a VM (*bort*), and the infinitival VM+V (*bort inni*) is a VM of a higher lexical verb (*menni*). In this case the VM+V unit can move into the matrix clause (70b), but (70a), in which only the VM moves, is not grammatical as a neutral sentence:

- | | | | | | | |
|---------|---|-------------|---------------|---------------|---------------|-----------|
| | ?? VM(4) | V1 | V2 | V3 | V4 | |
| (70) a. | ?? <i>Bort</i> | <i>fog</i> | <i>akarni</i> | <i>menni</i> | <i>inni.</i> | (neutral) |
| | wine.ACC | will | want.INF | go.INF | drink.INF | |
| | VM(3) | | | | | |
| | [VM(4) | V4] | V1 | V2 | V3 | |
| b. | <i>Bort</i> | <i>inni</i> | <i>fog</i> | <i>akarni</i> | <i>menni.</i> | (neutral) |
| | wine.ACC | drink.INF | will | want.INF | go.INF | |
| | a, b. 'He will want to go in order to drink some wine.' | | | | | |

By our assumptions the element moving into the matrix clause has an aspectual feature, since it will occupy the [SPEC,TP] position and check the aspectual feature of the T head (27). According to the Minimal Link Condition (Chomsky 1995) in every case we expect that it is the closest element having an aspectual feature that moves into the finite TP. The sentence in (70b) contains two constituents having an aspectual feature, namely, the two verbal modifiers (26a). Our analysis can predict that in (70b) the whole infinitival TP must move. In (69a), on the other hand, the VM of the lowest verb can move; it is not blocked by any element. What follows from this is that the infinitival TP complement of an auxiliary does not have an aspectual feature. This means that an auxiliary does not take its infinitival complement as a verbal modifier. This is not an unexpected result: the syntactic relation between an auxiliary and its infinitival complement differs from the verb–VM relation in a few respects. For example, the auxiliary does not impose semantic selectional restrictions on its infinitival complement, the infinitive preserves its own complements and the infinitival clause can contain a focus or negation. Furthermore, as we have seen in Section 4, even the infinitive forming a verbal complex with the auxiliary can be distinguished syntactically from the infinitival VM of the lexical verb. On the other hand, auxiliaries do not have an aspectual feature, unlike VM-less lexical verbs, because VM climbing is allowed, while the T head can check its aspectual feature with only one element, as we supposed in Section 3. Our conclusion is that in Hungarian auxiliaries can be defined as aspectually defective verbs: an auxiliary neither has an aspectual feature nor selects a complement having an aspectual feature. We assume that in non-neutral finite clauses (5a), (6a, b) and in infinitival clauses where no element with an aspectual feature moves into or through TP (5a), (6a) the aspectual feature of the T head filled by the auxiliary is checked by an aspectual operator.^{26, 27} We add the two assumptions in (71) to our earlier assumptions on the aspectual feature (26), (27):

- (71) a. Auxiliaries do not have an aspectual feature.
 b. The TP complement of an auxiliary does not have an aspectual feature.

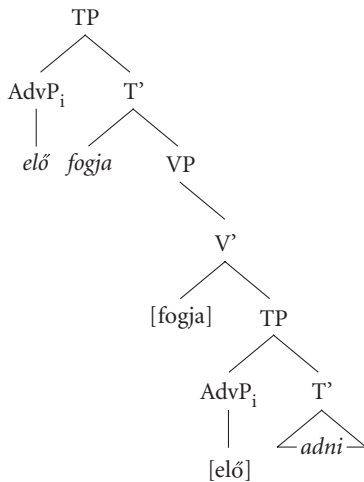
Let us turn to the structural analyses of the examples above. In sentences (67a), (68a) the adverbial complement *elő* is a verbal modifier of the verb *adni*. VMs have an aspectual feature (26a) and they check the aspectual feature of the T head (27); so the adverbial VM will move into TP either by XP movement (72a) or by incorporation and head movement if the Complex Head Constraint (36b) is not violated (72b).



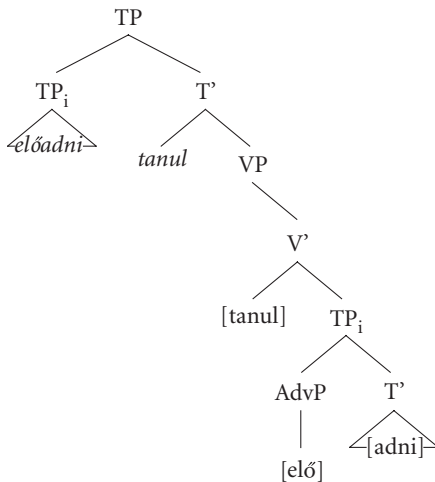
The sentence in (67a) contains a finite auxiliary, which must be preceded by a stressed element according to the Phonological Light Verb Constraint (58). In neutral sentences this can be satisfied by movement. In (67a) the only element that can move into [SPEC,TP] and check the aspectual feature of the finite T (27) is the VM of the embedded infinitive, because the TP complement of the auxiliary lacks an aspectual feature (71b). (73a) represents the structure of (67a) derived from (72a); head movement is excluded by the Complex Head Constraint (36a). In (68a) the lexical verb *tanul* has an infinitival VM *előadni*, which means that the TP complement of the finite verb has an aspectual feature (26a). This TP is a closer element than the adverbial VM, which it dominates; so the aspectual feature of the T head of the matrix clause (27) will be checked by the embedded TP undergoing short VM movement, as (73b) illustrates. We remark that the VM of the lower verb can be incorporated: (73b) can be derived either from (72a) or from (72b). In the case

of a VM-less infinitive (e.g. *úszni tanul*) the structure of the sentence is similar to (73b).

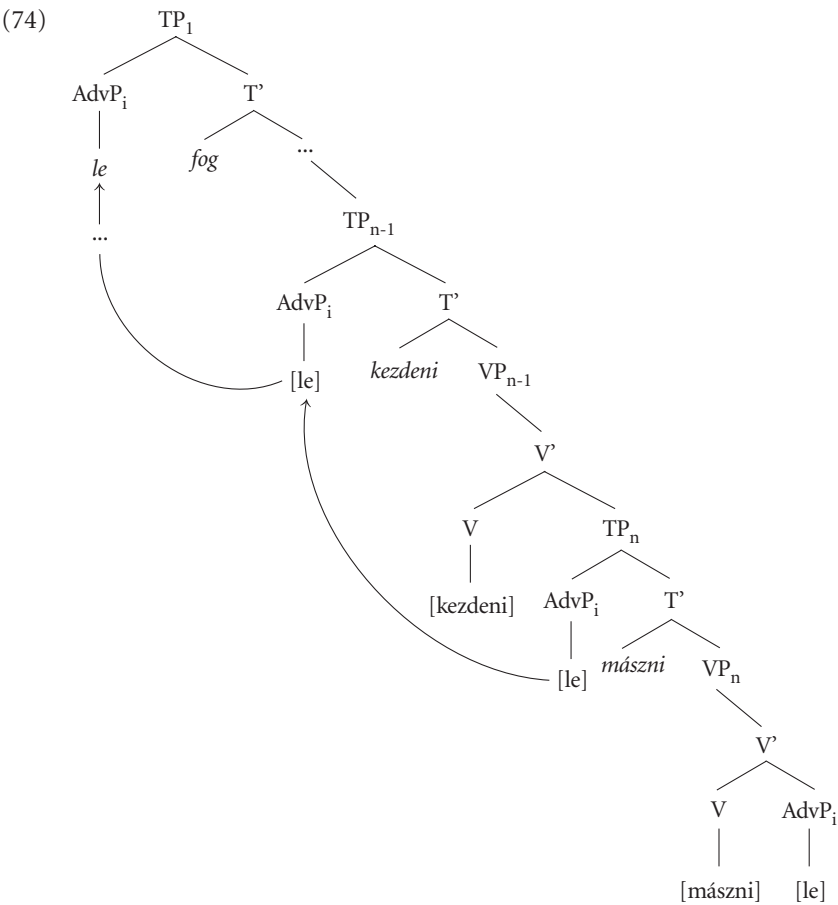
(73) a.



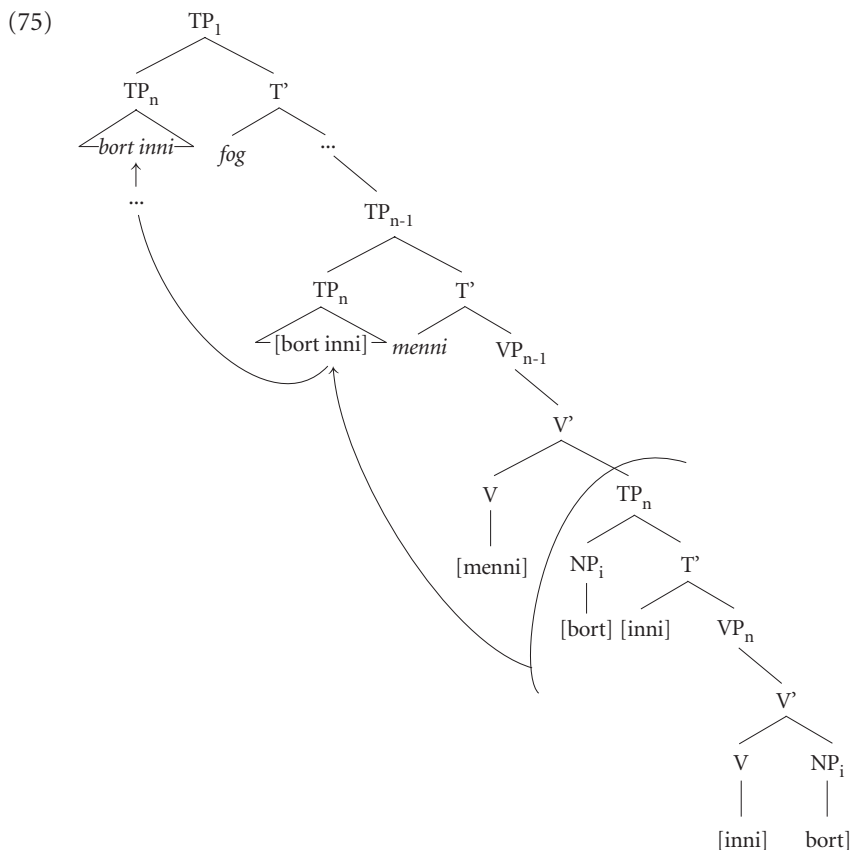
b.



In (69a) the lowest TP is selected by an auxiliary, so it does not have an aspectual feature (71b). The Phonological Light Verb Constraint (58) requires an element to precede the finite auxiliary. Considering that only the VM of the main verb (*le*) has an aspectual feature in this sentence (26a); it will move into the matrix clause by successive cyclic movement and check the aspectual features of the T heads (27). (74) shows the structure of the sentence.



In sentence (70b) there are two verbal modifiers, which have an aspectual feature (26a) forcing short VM movement. In the most deeply embedded clause the nominal VM *bort* can move into TP either by head movement or by XP movement. Then the whole lowest TP (*bort inni*), the VM of the verb *menni* moves into the higher TP; and since this infinitival VM is the closer element with an aspectual feature, it will move into the finite clause, triggered by the Phonological Light Verb Constraint (58). Accordingly, we get the following structure:



In previous analyses several stipulative solutions have been proposed in order to explain why the VM can occupy the position immediately preceding the finite auxiliary in (67a), (69a), while the VM+V cannot (67b), (69b). Brody (1997, this volume) supposes that an infinitival VM+V has a [+prefix] but does not have a [+VM] feature; the filter in É. Kiss (1999) does not allow a tensed verb to have a branching VM; and Alberti (2001, this volume) formulates a phonological constraint which requires the extraposition of a part of the infinitival phrase moving into the finite clause. But these analyses cannot account for the contrast between the two cases of VM climbing in (69) and (70): the sentence in which the whole infinitive (VM+V) precedes the finite auxiliary (70b) is ruled out incorrectly by them.²⁸ Our analysis can make a correct prediction for every case; the syntactic explanation follows from the assumption that a VM has an aspectual feature (26a), while a TP complement of an auxiliary does not (71b).

If the infinitival complement of the lowest auxiliary is a VM-less verb, then this element must move into the matrix clause; no other order can be accepted as a neutral sentence:

- V4

V1

V2

V3

(* V4 V1 V3 V2)

(76) a. *Úszni fogok akarni kezdeni.* (neutral)

swim.INF will.1SG want.INF begin.INF

‘I will want to begin to swim.’ (akar > kezd, *kezd > akar)
- *V2

V1

V3

V4

b. **Akarni fogok kezdeni úszni.* (neutral)

want.INF will.1SG begin.INF swim.INF
- *V4

V3

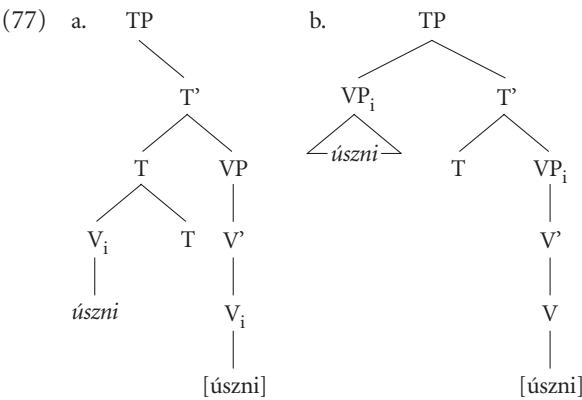
V2

V1

c. **Úszni kezdeni akarni fogok.* (neutral)

swim.INF begin.INF want.INF will.1SG

The ungrammatical sentences can be explained simply: in (76b) the highest infinitival TP would move into the finite clause, but it does not have an aspectual feature (71b); while (76c) violates the Complex Head Constraint (36a). However, in this case the lowest infinitive *úszni* is not a verbal modifier because it is selected by an auxiliary; therefore this TP does not have an aspectual feature (71b) and so it cannot move into the matrix clause. How can (76a) be derived? Since the lowest verb does not have a VM, it has an aspectual feature (26b), and it will move in order to check the aspectual feature (and the tense feature) of the lowest T head (27). The question arises whether head movement or phrasal movement is involved. The two possible structures are represented below; the verb moves to the T head in (77a) and the VP, the complement of the T head, moves to [SPEC,TP] in (77b).



The Head Movement Generalization of Pesetsky and Torrego (2001) postulates that in such a case head movement is obligatory, XP movement is not possible.

(78) HEAD MOVEMENT GENERALIZATION

Suppose a head H attracts a feature of XP as part of a movement operation. If XP is the complement of H, copy the head of XP into the local domain of H. Otherwise, copy XP into the local domain of H.

Nevertheless, the well-formed neutral sentence (76a) cannot be derived by head movement (77a): the Complex Head Constraint (36a) does not allow the T head to move into the finite clause; and since in this sentence only the element *úszni* has an aspectual feature, the Phonological Light Verb Constraint (58) would be violated. But this problem does not imply that the basic idea of the Head Movement Generalization (78) conflicts with the proposed constraints. We assume that head movement is a more economical operation than XP movement: if we can get a convergent derivation by both head movement and XP movement, then head movement will be preferred. On the other hand, if head movement is excluded by some principle, then the derivation will not crash, in this case XP movement is allowed. Accordingly, in our analysis (76a) is generated by successive cyclic VP movement; (77b) shows the structure of the most deeply embedded clause.²⁹ So we get that in sentences containing no VM the finite auxiliary is preceded by the structurally lowest infinitive (76).

In this section we concluded that neither auxiliaries nor their TP complements have an aspectual feature; auxiliaries are aspectually defective verbs. As was shown, it follows that long VM movement is a syntactic operation indeed: the stressed element preceding the finite auxiliary must always be the closest constituent having an aspectual feature. If the infinitival complement of an auxiliary is a lexical verb with a VM, then only the VM can move into the matrix clause. But the finite auxiliary can be preceded by an infinitival VM+V unit, provided that it is a TP selected by a lexical verb, which takes it as a (larger) VM. Finally, if the lowest infinitival clause contains a VM-less lexical verb, then this element precedes the finite auxiliary: in this case the VP having an aspectual feature will move into the matrix TP.

6.2 Stative verbs

In Hungarian there is a third type of the verbs selecting an infinitival complement. These verbs are often called stative verbs or stress-requiring verbs; a few of them are found in (79).

(79) Stative verbs:

<i>szeret</i>	<i>utál</i>	<i>fél</i>	<i>habozik</i>
like	hate	is afraid	hesitate

If the infinitival complement of a stative verb is a verb with a verbal modifier, then neither the VM (80b) nor the whole VM+V unit (80c) can precede the finite verb; the infinitival VM+V must be left behind (80a).

- (80) a. *Utálok be-menni.* (neutral)
 hate.1SG in-go.INF
 ‘I hate to go in.’
 b. **Be utálok menni.* (neutral)
 in hate.1SG go.INF
 c. **Be-menni utálok.* (neutral)
 in-go.INF hate.1SG

If the stative verb is not finite, it must be followed by its infinitival complement as well:

- (81) a. *Nem fogok utálni bemenni.*
 not will.1SG hate.INF in-go.INF
 ‘I will not hate to go in.’
 b. **Nem fogok bemenni utálni.*
 not will.1SG in-go.INF hate.INF

We analyze stative verbs as VM-less lexical verbs selecting a TP. On the one hand, similarly to auxiliaries, a stative verb does not take its TP complement as a VM, the TP does not have an aspectual feature (26a); that is why (80c) and (81b) are wrong. On the other hand, stative verbs have an inherent aspectual feature, like other VM-less lexical verbs (26b).³⁰ As a result of this assumption a VM is not allowed to move from an embedded clause into the matrix clause containing a stative verb (80b), because the T head cannot check its aspectual feature with more than one elements. Furthermore, we can provide an explanation based on the Minimal Link Condition (Chomsky 1995) for the fact that long VM movement cannot cross a stative verb (82b) and the finite auxiliary will be preceded by the infinitival stative verb (82a).³¹

- (82) a. *Utálni fogok be-menni.*
 hate.INF will.1SG in-go.INF
 ‘I will hate to go in.’
 b. **Be fogok utálni menni.*
 in will.1SG hate.INF go.INF

(82a) can be derived in a way similar to (76a). Due to the Phonological Light Verb Constraint (58) some stressed element must move into the matrix TP. The verb *utálni* having an aspectual feature is closer than the VM *be* in the most embedded

clause and in this case the VP will move, because head movement would violate the Complex Head Constraint (36a).

In sum, in our analysis the values of aspectual features of the verb and its complement provide the types of Hungarian verbs examined in this paper, in the following way:

(83)	aspectual feature				
	verb	complement	TP complement		
lexical verbs without VM	+	–	not selected	<i>ír</i>	write
	+	–	–	<i>utál</i>	hate
lexical verbs with VM	–	+	not selected	<i>szét-szed</i>	apart-take
	–	+	–	<i>el-kezd</i>	PREV-begin
	–	+	+	<i>úszni megy</i>	swim-INF go
auxiliaries	–	–	–	<i>akar</i>	want

7. Further issues

7.1 The problems of the dual analysis revisited

Now let us return to the phenomena mentioned in 2.2 that seem to provide some evidence against a dual analysis ([I A], [II A]).

[I A/1] *Coordination*. This is a more general question, as the X' level should be eliminated from our theory. In this case the problem disappears, since no X' constituent can be coordinated; however, we will be required to give some alternative solution for each case analyzed by X'-coordination. There is another problem, since by the Complex Head Constraint (36) the VM preceding a finite verb (including auxiliaries) cannot be a head, but the VM+V can be coordinated (14). This construction may be derived by ellipsis.

[I A/2] *NP constituents*. A noun with an adjective is not a VM in the typical case, but this is not necessarily a matter of syntax: the presence of the adjective implies contrastivity due to semantic or pragmatic factors and so the whole expression will be in focus position. But in the case of a less informative adjective (e.g. *nagy bajba* (*kerül*)) the whole expression will be a VM, which is indicated by the order of negation:

- (84) *Nem kerültem nagy bajba.*
 not got.1sg great trouble-into
 'I didn't get into great trouble.'

[II A/1] *DP constituents*. The phenomena of this type of VMs do not disprove the dual analysis; what is more, they confirm it, because these VMs do not have a dual nature. They always behave as phrases; they cannot form a complex head with their verb. (85b) illustrates that no inversion is possible, which follows if roll-up structures are analyzed by head movement.³²

- (85) a. *Nem fogok akarni a szobában maradni.*
 not will.1SG want.INF the room-in stay.INF
 ‘I will not want to stay in the room.’
 b. **Nem fogok a szobában maradni akarni.*
 not will.1SG the room-in stay.INF want.INF

This type of VMs is found in Dutch as well. We have seen in (25) that the VM *schoon* can occupy two positions, showing dual nature. But the VM *erg schoon* is a phrasal constituent: it cannot be incorporated into the verb (86a), it must move obligatorily into PredP by an XP movement (86b).

- (86) a. *... *omdat hij het raam heeft willen erg schoon*
 because he the window has want.INF very clean
 maken.
 make.INF
 b. ... *omdat hij het raam erg schoon heft willen maken.*
 because he the window very clean has want.INF make.INF
 a, b. ‘... because he wanted to make the window very clean.’

7.2 Auxiliaries and light verbs

Finally, we briefly outline the question of why auxiliaries, i.e. aspectually defective verbs are syntactic and phonological light verbs and why the two light verb constraints have an effect only on auxiliaries.

We can observe the following interesting property of stative verbs: if the verb *utálni* selects a TP complement, then the auxiliary cannot form a complex verb with it (87a); but if it selects a DP, complex verb formation is allowed (87b).

- (87) a. **Nem fogok utálni akarni t_i bemenni.*
 not will.1SG hate.INF want.INF in-go.INF
 ‘I will not want to hate to go in.’ (**akar* > *utál*)
 b. *Nem fogom utálni akarni t_i a főnököt.*
 not will.1SG.DEF hate.INF want.INF the boss.ACC
 ‘I will not want to hate the boss.’ (*akar* > *utál*)

This fact can be explained if we assume that in Hungarian not only auxiliaries but stative verbs also belong to syntactic light verbs. This means that (87a) is ruled out in the same way as (5b) was in Section 4: a syntactic light verb cannot be adjoined to another one. As we have seen, syntactic light verbs must select a TP complement, so in (87b) *utál*ni is a non-light verb, which can form a complex verb with the auxiliary. We suspect that at LF certain verbs selecting a TP must form a complex predicate with their infinitival complements and this is satisfied by overt movement of the infinitival head unless it conflicts with some principle. In the case of auxiliaries we can get an inverted order depending on the Complex Head Constraint (36). As for non-auxiliaries, if their infinitival TP complement does not have an aspectual feature, then – either the verb or one of its other complements has an aspectual feature – no inversion is possible; because the infinitival head that would be adjoined has an aspectual feature (due to either the lowest infinitive or its VM), but the T head cannot check its aspectual feature with more than one elements. This explains that – although stative verbs are syntactic light verbs – (81b) is not grammatical. If the infinitival TP complement of a non-auxiliary has an aspectual feature, then it undergoes short VM movement forced by feature checking, so here the Syntactic Light Verb Constraint (28) becomes redundant.

In the case of a non-auxiliary, no movement is triggered by the Phonological Light Verb Constraint (58). A VM-less lexical verb cannot be a phonological light verb: it has an aspectual feature (26b), and T can check its aspectual feature with only one element; therefore in a neutral sentence the phrasal stress must fall on the verb. On the other hand, if a lexical verb has a VM, then the VM has an aspectual feature (26a), consequently, it will move into TP, motivated by feature checking. In this case the Phonological Light Verb Constraint (58) is not relevant, and it can be satisfied independently from VM movement, as we have seen.

According to the Auxiliary Constraint (É. Kiss this volume), an auxiliary cannot represent the main assertion in a clause. Since in a neutral sentence it is the constituent having an aspectual feature that represents the main assertion, the Auxiliary Constraint follows from our assumption that auxiliaries do not have an aspectual feature (71a). As is known, the element representing the main assertion must be stressed. Let us suppose it is a biconditional: an element can bear phrasal stress only if it can represent the main assertion, which requires it to have a suitable feature. If this proves to be right, it can explain why auxiliaries are subject to the Phonological Light Verb Constraint (58).

8. Conclusion

In this paper I tried to show that the standard minimalist theory can capture most syntactic properties of the Hungarian verbal complex. I proposed a dual analysis for VMs as a possible solution for the problem that they can behave either as phrases or as heads. This means that the inverted order of the embedded infinitives can be generated by head movement: infinitival heads move in order to form a complex predicate with the auxiliary, required by the Syntactic Light Verb Constraint. The Complex Head Constraint I proposed not only explains why the inverted order in the verbal complex does not extend to the finite verb and why roll-up is optional, but also accounts for the contrast between the word order of finite and infinitival non-neutral (focused and negated) sentences. My assumption was that VMs and lexical verbs selecting no VM (including stative verbs) have an aspectual feature, while auxiliaries are aspectually defective: neither they nor their complements have an aspectual feature. I argued that short and long VM movement should be distinguished from each other. In the case of short VM movement the VM obligatorily moves into the TP of its own clause either by head movement to T or by phrasal movement to [SPEC,TP] and checks the aspectual feature of the T head. On the other hand, in the case of long VM movement the VM moves into a higher clause containing an auxiliary by XP movement. The Phonological Light Verb Constraint, which does not allow an auxiliary to bear phrasal stress, forces some element to precede the finite auxiliary. What will move into the TP of the neutral matrix sentence is the closest element having an aspectual feature, which is the highest VM or – if there is no VM – the most deeply embedded infinitival VP. It seems that the discussed properties of auxiliaries are not independent from each other, but this question remains for further research.

Notes

* I would like to thank participants of the workshops on verb clusters for comments. I am especially grateful to Katalin É. Kiss, Michael Brody, Gábor Alberti, Anikó Csirmaz and Kriszta Szendrői.

1. In this paper, like in most of the papers on Hungarian syntax, the term ‘auxiliary’ will be used in a special sense: it will refer to the class of Hungarian verbs discussed in 2.1. In Section 6 we will deal with two types of Hungarian non-auxiliaries.
2. Most of the data are from Szabolcsi (1996). Note that traces are marked only if it seems to be necessary and intermediate traces are never marked.
3. The ungrammaticality of (8) is not related to the surface position of the DP complement of the infinitive in the matrix clause. If the lowest infinitive does not have a VM, the linear order of the grammatical sentence corresponds to (8):

- (i) *Találkozn_i fogok akarni t_i Jánossal.* (neutral)
 meet.INF will.1SG want.INF John.with
 'I will want to meet John.'

4. Dialect 2 is mentioned in a few papers (Brody 1997, this volume; É. Kiss 1999; Szendrői this volume). Koopman and Szabolcsi (2000) only accept the data of Dialect 1. It is not clear how their analysis can be extended to Dialect 2.

5. Brody (1997, this volume) gives some evidence for the existence of both types of movement based on the fact that the interpretation of the focused infinitive (contrastive or emphatic) correlates with the type of movement (XP movement or head movement).

6. We would not like to eliminate the device of remnant movement, which does not seem to be problematic, unless head movement is eliminated (like in Koopman & Szabolcsi 2000). The climbing of an infinitival VM probably involves remnant movement, which is indicated by the surface position of the complement of the infinitive, exemplified by (82a) and (i) in Note 3. We remark that this phenomenon will be observed in a lot of ungrammatical sentences (29), (30a, b), (63d), (76b); they should be ruled out by some other means.

7. This is one of the possible ways for a dual analysis in the standard theory. Since the Hungarian VM can also move by head movement, we do not prefer the version of dual analysis that claims – adopting an idea from Dobrovie-Sorin (1999) – that in syntax the VM behaves as a phrase and then it cliticizes to the verbal head phonologically.

8. Note that incorporation is assumed to be optional even in some head analyses (É. Kiss 1999; Csirmaz 1998).

9. In this paper sentences having an existential reading will be ignored.

10. One might think that the idea that the T head can have an aspectual feature can be developed for English, considering the fact that in overt syntax aspectual auxiliaries move to T (ii-a), while lexical verbs must remain inside VP (ii-b).

- (ii) a. *John has often eaten / *often has eaten chocolate.*
 b. *John often arrives / *arrives often late.*

In Pollock (1989) the explanation for this phenomenon was based on the semantic vacuity of auxiliaries, but this is problematic in various respects.

11. The Syntactic Light Verb Constraint proposed in É. Kiss (1999) claimed – in accordance with Roberts (1997) – that theta-role assignment is the relevant property; while Bartos (this volume) assumes that Hungarian auxiliaries have an optional [+suffix] feature. As Kenesei (2000) shows, in Hungarian there are three verbs ('auxiliaries' in this sense) that do not assign a theta-role: *fog* 'will', *szokott* 'tend to', and *talál* 'happen to'.

12. We assume that the Syntactic Light Verb Constraint is always satisfied at LF. This means that overt head movement is not the only way to form a complex predicate, but this question will not be examined here.

13. Apart from two cases mentioned in 2.2. If the negative marker *nem* appears between the VM and the verb, the VM moves from TP into another position, because NegP is structurally higher than TP. Emphatic *is* is a special element, the surface position of which may depend on phonological factors.

14. There is a problem for (36a): the finite T allows the V+Mod complex head to be adjoined to it (e.g.: *fut.hat.ott* 'run.POT.PAST').
15. It follows from (35) and (36a) that the VM can be incorporated only into an infinitival V head, so (21) must contain an infinitival form.
16. The optional order of infinitival non-neutral sentences (33a, b) could be derived if the Complex Head Constraint (36b) were modified in such a way that the infinitival T allows a complex head to be adjoined to it. But this property of the infinitival T should be assumed to be optional, considering the constructions containing infinitival auxiliaries (5a), (6a, b).
17. Both the Uniformity Constraint in Bartos (this volume) and the Complex Head Constraint (36) are necessary: although they are redundant for excluding (29) and (30); only the former can explain the phenomena of personal agreement, while only the latter can be applied to the contrast between the finite (32) and the infinitival non-neutral sentence (33).
18. (40) shows the case in which the VM is incorporated. Of course, the English order (5a) can be derived without VM incorporation (see (21)).
19. We mention that for the ungrammatical sentences in (30a, b) head movement can be excluded not only by the Complex Head Constraint (36) but also by this idea.
20. It seems that the degree of acceptability depends on the verb. (The question of whether this is a simple aspectual phenomenon is left open.) In (iii) (the verb: *megy*; non-auxiliary) the straight order is more acceptable than in (45) (the verb: *tanul*; non-auxiliary) but less acceptable than in (44) (the verb: *kezd*; auxiliary):

- (iii) a. *Nem fogok akarni úszni menni.*
 not will.1SG want.INF swim.INF go.INF
 b. *?Nem fogok akarni menni úszni.*
 not will.1SG want.INF go.INF swim.INF
 a, b. 'I will not want to go swimming.'

However, for the verb *megy* the contrast is sharper in (iv) than in (iii):

- (iv) a. *Jó lenne úszni menni.*
 good would-be swim.INF go.INF
 b. *?Jó lenne menni úszni.*
 good would-be go.INF swim.INF
 a, b. 'It would be good to go swimming.'

21. Szendrői (1999, 2001, this volume) develops a general theory of stress-driven movement, which is also applied to focus movement. Csirmaz (this volume) argues that not only auxiliaries but stress-avoiding verbs are also phonological light verbs.
22. In Hungarian phrasal stress falls on the leftmost element.
23. Szendrői (this volume) provides further evidence for this, pointing out that VM climbing is sensitive to adjunct islands.
24. Even a speaker of Dialect 1 may find that VM climbing is less unacceptable in a neutral infinitival clause (9) than in a non-neutral one (65).

25. In my approach the verb must occupy a higher position in a non-neutral sentence than in a neutral one. In Olsvay (2000) I show that this follows from further independent facts.

26. This aspectual operator is optional, but it can be present only if our constraints allow it. If the matrix clause is neutral (3), then no embedded TP can contain an aspectual operator, because it would block VM climbing, and so the Phonological Light Verb Constraint (58) would be violated. Several problems arise (for example, about economy, at least in a technical sense), but they are left for future research. We argue against an alternative solution in Note 29.

27. In the case of lexical verbs an invisible aspectual operator can appear only in progressive sentences (19b), otherwise the VM of the verb has an aspectual feature, which must be checked in TP.

28. In addition, a finite auxiliary can be preceded by a branching VM in some other cases: for example, in (v) the VM *elég furcsának* is an adjective modified by an adverb.

- (v) *A válasz elég furcsának fog tűnni.*
 the answer rather funny.DAT will seem.INF
 'The answer will seem to be rather funny.'

29. The question arises whether (71a) can be weakened in such a way that auxiliaries can optionally have an aspectual feature and the aspectual feature of T is checked by them when it is necessary. In this case VP movement into [SPEC,TP] would be possible if the head of the VP is an auxiliary, similarly to (77b). But (29), (30a, b) and (76b, c) are not good sentences, thus we have to reject the idea of the optional aspectual feature of auxiliaries.

30. This syntactic property is supported semantically, since the aspect of the matrix clause containing a stative verb is independent of the aspect of the embedded clause. In Alberti (2001, this volume) stative verbs have the same syntactic properties as in this paper, but auxiliaries do not: he assumes that the TP complement of the auxiliary behaves as an aspectualizer.

31. It is obvious from (80a) that stative verbs are not subject to the Phonological Light Verb Constraint (58). But this is not sufficient to assume: as (82b) shows, they must have an aspectual feature, unlike auxiliaries.

32. Note that our analysis for VMs – unlike a head analysis – allows that the DP (*a szobában*) is a VM of the verb (*marad*) in (15), (85), as Csirmaz (this volume) claims. However, our proposal is not incompatible with the assumption in É. Kiss (1999) that these DPs occupy focus position.

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Parallel strategies of verbal complex formation in Hungarian and West-Germanic?

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1. Introduction

After some preliminary information on the Hungarian verb phrase in Section 2, the paper will analyze the different strategies of verbal complex formation in Hungarian – also discussing facts not considered in the literature so far, and will demonstrate that the outputs of these strategies are similar to the types of verbal complexes found in some West-Germanic languages. Section 3 will discuss two kinds of Hungarian verbal complex formed by the generation of an extended verb projection, and Section 4 will demonstrate their similarity to the verbal complexes attested in Dutch, West Flemish, and Swiss German. Section 5 will examine the Hungarian verbal complex formed by cyclic incorporation, and Section 6 will point out its similarity to the verbal complex found in standard German. It will be suggested that the correspondences between the Hungarian and West-Germanic constructions may result from similar operations performed on a similar base. Section 7 will briefly discuss the derivation of the West-Germanic verbal complexes from an OV base, and Section 8 will demonstrate why the proposed approach cannot be applied to Hungarian. The discussion will lead to the conclusion that the similar Hungarian and German constructions can only be derived in a parallel fashion, by means of similar operations if these operations are applied to a VO base in West-Germanic, as well.

2. Preliminaries: The minimal verbal complex in Hungarian

The analysis of Hungarian infinitival constructions depends, in part, on the structure that we assign to the minimal verbal complex. It will be assumed that the

Hungarian VP is a V-initial construction subsumed by a series of morphosyntactic projections (ModalityP, TenseP, MoodP, AgrOP, and AgrSP in the case of finite verbs, and InfP in the case of infinitives), whose heads are spelled out suffixed to the verb.¹ A notoriously problematic element of the verbal complex is the so-called verb modifier (VM): a non-referring expression constituted by a bare adverb, a bare noun, a case-marked adjective, or a postposition, which usually changes the action-sart of the verb, and also modifies its meaning in other ways. In neutral sentences the verb modifier precedes the verb, constituting a phonological word with it:

- (1) a. *János haza ment.*
 John home went
 'John went home.'
 b. *János levelet ír.*
 John letter-ACC writes
 'John is letter-writing.'
 c. *Jánost mindenki bolondnak tartja.*
 John-ACC everybody fool-DAT considers
 'John, everybody considers a fool.'

In the presence of a focus or a negative particle, on the other hand, the verb modifier follows the verb:

- (2) a. [_{FP} JÁNOS *ment haza*]
 John went home
 'It was John who went home.'
 b. [_{TopP} János [_{FP} MARINAK *írt levelet*]]
 John Mary-DAT wrote letter
 'As for John, it was to Mary that he wrote a letter.'
 c. [_{DistP} Mindenki [_{FP} JÁNOST *tartja bolondnak*]]
 everybody John-ACC considers fool-ACC
 'For everybody, it is John that he considers a fool.'
- (3) a. [_{TopP} János [_{NegP} *nem ment haza*]]
 John not went home
 'John didn't go home.'
 b. [_{TopP} János [_{NegP} *nem írt levelet*]]
 John not wrote letter
 'John didn't write any letters.'
 c. [_{TopP} Jánost [_{NegP} *nem tartja bolondnak mindenki*]]
 John-ACC not considers fool-DAT everybody
 'John isn't considered a fool by everybody.'

The description of the different verb modifier–verb orders in (1)–(3) depends, in part, on whether the VM is analyzed as a phrase or as a head. It is an indication of the phrasal status of the VM that it can move at a long distance – even across a clausal boundary. For example:

- (4) a. *Levelet_i kell, [CP hogy írjunk t_i Jánosnak]*
 letter-ACC needs that write-we John-DAT
 ‘It is necessary that we write a letter to John.’
 b. *Haza_i akarom, [CP hogy gyertek t_i]*
 home want-I that come-you
 ‘I want you to come home.’

The verb modifier can also be focussed or topicalized, i.e., it can be moved to Spec,FP, and Spec,TopP, which are landing sites for phrasal constituents. E.g.

- (5) a. [_{TopP} *Bolondnak* [_{FP} JÁNOST tartják]]
 fool-DAT John-ACC consider-they
 ‘It is John that they consider a fool.’
 b. [_{FP} *Csak levelet küldtem Jánosnak*], *csomagot nem.*
 only letter-ACC sent-I John-DAT parcel-ACC not
 ‘It was only letter(s) that I sent to John; parcel(s), I didn’t send him.’

Furthermore, the VM can constitute an elliptical sentence in itself, which is also considered to be a phrasal property:

- (6) “*Meg etted az ebédet?*” “*Meg.*”
 up ate-you the lunch up
 ‘Have you eaten up the lunch?’ ‘Yes.’

These facts suggest that the VM is a phrase, consisting of a mere head. Since the adverbial VM, the so-called preverb, usually plays a perfectivizing role, and every type of verb modifier affects the aspect of its clause in some way, let us assume that the VM occupies the specifier of an AspP projection.² Let us also assume that the V is raised into the empty Asp head. This latter assumption would explain why the post-VM section of the sentence cannot be subject either to coordination (7) or to ellipsis (8):

- (7) **A macska [AspP fel [[ugrott az asztalra] és [mászott a kerítésre]]]*
 the cat up jumped the table-on and climbed the fence-on
 ‘The cat jumped up on the table and climbed up on the fence.’

- (8) **János nem sokáig tanulta a verset, de* [_{AspP} *meg*
 John not long learned the poem but PERF
 [~~*tanulta a verset*~~]].
~~learned the poem~~
 'John has not been learning the poem for long, but he has learned it.'

The ungrammaticality of (7) and (8) must be a consequence of the fact that the constituents subjected to coordination and ellipsis are not maximal projections but are of the category Asp'.

The postverbal position of the VM in sentences containing an identificational focus or a negative particle is derived from the assumption that in such sentences no AspP is generated; the F(ocus) head or Neg head is merged with the VP, instead of AspP, see (9a, b).³ That is, FP and NegP are not extensions of AspP but are alternatives to it.

- (9) a. [_{FP} JÁNOS_i [_{VP} *mászott fel* t_i a *kerítésre*]]
 John climbed up the fence-on
 'It was John who climbed up on the fence.'
 b. [*János*_i [_{NegP} *nem* [_{VP} *mászott fel* t_i a *kerítésre*]]]
 John not climbed up the fence-on
 'John did not climb up on the fence.'

The assumption that sentences with an identificational focus or negation lack an AspP projection is also semantically motivated: as argued e.g. in É. Kiss (2002), aspect is neutralized in the scope of identificational focus and negation.

3. The straight order extended verbal complex in Hungarian

Hungarian being an agglutinating language, auxiliaries play no major role in Hungarian syntax. Nevertheless, there is a group of verbs subcategorizing an infinitive phrase which do not relate to their infinitive phrase complement as a lexical head relates to a subordinate clause but rather form an extended verb projection with it. This group includes verbs of temporal and modal meaning, among them:

- (10) a. *fog* 'will', *szokott* 'used to', *talál* 'happens to'
 b. *szeretne* 'would like', *kezd* 'begin', *készül* 'prepare', *próbál* 'try', *bír*
 'manage', *kíván* 'desire', *óhajt* 'wish', *mer* 'dare', *szándékozik* 'intend',
tud 'can' (cf. Kálmán et al. 1989; Kenesei 2000)

What is common in these verbs is that (at least under one interpretation) they do not assign theta roles, but combine with a theta-role-assigning infinitival head, and share its arguments. Those enlisted under (10a) are totally incapable of indepen-

dent theta role assignment, hence they always merge with an infinitive. The verbs listed under (10b), on the other hand, can apparently either be associated with a theta-grid of their own, or can combine with an infinitive, sharing its arguments. The former set of verbs are assumed to be marked as [+auxiliary], and the latter set of verbs, as [+/-auxiliary] in the lexicon (or, adopting a proposal by van Riemsdijk (1998), they are marked as [+functional] or [+/-functional], respectively).

A string of verbs consisting of one or more auxiliaries and one theta-role-assigning lexical verb constitute a verbal complex. If the verbal complex consists of three or more verbal elements, it becomes clear that there are two basic strategies of verbal complex formation, which yield strings with opposite word orders.

In the straight order verbal complex, the finite verb (to be referred to as V1) stands first, and the lexical infinitive (to be referred to as V4) stands last. In neutral sentences, involving no focus or negation, the verb modifier, selected by the lexical verb, precedes all verbal elements.

- (11) *A fogoly haza fog akarni próbálni szökni.* (VM V1 V2 V3 V4)
 the captive home will want-INF try-INF flee-INF
 'The captive will want to try to flee home.'

If the verbal complex is merged with a focus or a negative particle, the verb modifier will stand in front of its lexical head, V4:

- (12) a. *A fogoly KARÁCSONYKOR fog akarni próbálni haza szökni.*
 the captive Christmas-at will want-INF try-INF home
 flee-INF (F V1 V2 V3 VM V4)
 'The captive will want to try to flee home AT CHRISTMAS.'
 b. *A fogoly nem fog akarni próbálni haza szökni.*
 the captive not will want-INF try-INF home flee-INF
 'The captive will not want to try to flee home.'
 (Neg V1 V2 V3 VM V4)

Some speakers also accept the V1 VM V2 V3 V4 order after a focus or a negative particle, with the VM preceding the non-finite section of the verbal complex, see (13a, b). The V1 V2 VM V3 V4 order illustrated in (14a, b) is very marginal also for these speakers.

- (13) a. [?]*A fogoly KARÁCSONYKOR fog haza akarni próbálni szökni.*
 the captive Christmas-at will home want-INF try-INF
 flee-INF (F V1 VM V2 V3 V4)
 'The captive will want to try to flee home AT CHRISTMAS.'
 b. [?]*A fogoly nem fog haza akarni próbálni szökni.*

but:

- (14) a. [?]**A fogoly KARÁCSONYKOR fog akarni haza próbálni szökni.*
 (F V1 V2 VM V3 V4)
 b. [?]**A fogoly nem fog akarni haza próbálni szökni.*

The V1 V2 V3 VM V4 order attested in (12a, b) is ungrammatical in lack of a focus or a negative particle (and so are its degraded variants in (13) and (14)). In a so-called neutral sentence, involving neither focusing, nor negation, the verb modifier is obligatorily raised in front of the whole verbal complex. Thus (15) is ungrammatical – unless *fog* ‘will’ is understood to be contrasted with a previous *nem fog*... ‘not will...’, expressing emphatic assertion: the denial of a previous denial:

- (15) %_[TopP] *A fogoly* [_{VP} *fog akarni próbálni haza szökni*]
 the captive will want-INF try-INF home flee-INF
 (%V1 V2 V3 VM V4)

The generalization emerging from examples (11)–(15) is that an auxiliary cannot represent the main assertion in a sentence. By main assertion I mean the highest – and leftmost – element of the predicative complex, that which bears the heaviest stress (given that phrasal stress is assigned to the left edge of phrases in Hungarian). It is this element that necessarily expresses non-presupposed information in a matrix sentence. In a sentence consisting of a topic and a VP, the main assertion is represented by the V, see (16a). If the VP is subsumed by an AspP, the main assertion is represented by the verb modifier in Spec,AspP, as in (16b), in which the main assertion is the completion of the action denoted by the VP. If the VP is preceded by negation, the main assertion is the negation of the – possibly presupposed – VP, see (16c). If the VP is preceded by a focus, the exhaustive identification of the referent of the focus represents the main assertion, see (16d). If the focus is preceded by negation, the main assertion is represented by the pre-focus negative particle – given that in this case everything else, the focus included, is (or at least can be) presupposed, see (16e).

- (16) a. *János* [_{VP} *olvas egy könyvet*]
 John reads a book
 ‘John is reading a book.’
 b. *János* [_{AspP} *ki olvasta_i* [_{VP} *t_i a könyvet*]]
 John through read the book
 ‘John has finished reading the book.’
 c. *János* [_{NegP} *nem* [_{VP} *olvasta ki a könyvet*]]
 John not read through the book
 ‘John has not finished reading the book.’

- d. *János* [_{FP} *tavaly* [_{VP} *olvasta a könyvet*]]
 John last.year read the book
 'It was last year that John read the book.'
- e. *János* [_{NegP} *nem* [_{FP} *TAVALY* [_{VP} *olvasta a könyvet*]]]
 John not last.year read the book
 'It wasn't last year that John read the book.'

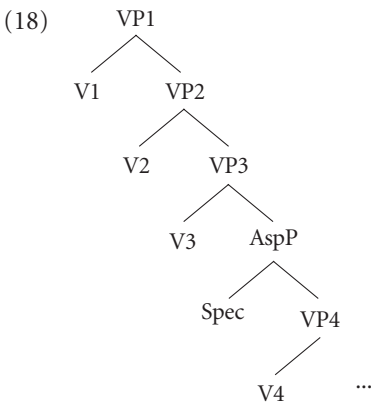
In (15) the main assertion is not the content of the auxiliary. The auxiliary merely serves as the carrier of the main assertion; the semantic structure of (15) is understood to contain two negations above the auxiliary, meaning 'it is **not** the case that the captive will **not** want to try to escape'. That is, the following generalization can be maintained:

(17) THE AUXILIARY CONSTRAINT

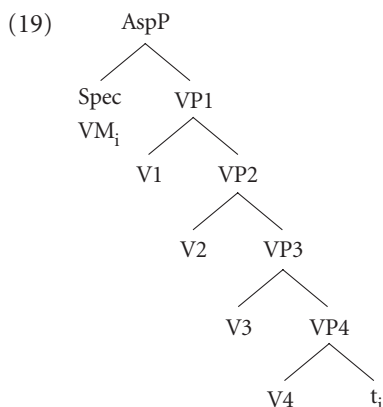
An auxiliary cannot represent the main assertion in a clause.

(17) means for Hungarian – and possibly also for other languages in which phrasal stress is assigned to the left edge of phrases – that an auxiliary cannot be the highest predicative element in a sentence. So as to avoid a violation of (17), the highest auxiliary in a verbal complex must be preceded by a verb modifier (as in (11)), a focus (as in (12a)), or a negative particle (as in (12b)) – or else it will be interpreted as the carrier of the denial of a previous negation.

The next question is how the two different VM positions attested in (11) and (12) (and possibly also the marginally acceptable VM position attested in (13)) should be derived, and should be related to each other. If the lexical verb (V4) of the verbal complex selects a verb modifier, it will have to land in the specifier of an AspP. This AspP can be generated immediately above the infinitival lexical verb, as represented in (18):



This construction, however, cannot represent the predicate of a Hungarian sentence in itself, because it violates the Auxiliary Constraint. It can only survive if it is subsumed by an operator projection: a F(ocus)P or a NegP. In (12a) it is extended into an FP, and in (12b), into a NegP. In lack of a focus or a negative particle, the verbal complex escapes the Auxiliary Constraint only if AspP is generated on top of the whole verbal complex, see (19). Since V1, V2, V3, and V4 are associated with a shared argument structure, they constitute a phase together, so VM movement into the specifier of AspP dominating VP1 must be a phase-internal move. That is, it is not necessary for us to generate an AspP projections above each VP and to assume cyclic VM climbing.



The fact that some speakers also accept (13), and very marginally even (14), means that for them the AspP providing a landing site for the VM can be merged into the verbal complex also at an intermediate point. The resulting structure, naturally, will violate the Auxiliary Constraint, unless it is extended into an FP or NegP.

The question arises how the violation of the Auxiliary Constraint can be avoided if the lexical verb of the verbal complex selects no verb modifier, and the sentence contains no focus or negation. Then V4 does not project an AspP, however, the verbal complex as a whole will project one, whose specifier is to be occupied by V4 itself. The infinitive phrase can be analyzed as a verb modifier if it consists of a mere head, i.e., if its complements have been extraposed. E.g.

- (20) *Mari* [_{AspP} *énekelni fog akarni tanulni*] (V4 V1 V2 V3)
 Mary sing will want-INF learn-INF
 'Mary will want to learn to sing.'

Structure (18), displaying no VM climbing, and structure (19), involving VM climbing, appear to be merely contextual variants of the verbal complex: one used in the presence of a focus or a negative particle, the other used in a focusless as-

sertive sentence. In fact, however, they differ in a semantically significant way. The verbal complex of (19), c-commanded by a shared AspP, can be modified by predicate adverbials, e.g. adverbials of frequency, only as a whole, see (21a, b). In the case of (18), on the other hand, adverbial modification can have varying scope, depending on where the adverbial stands, see (22a, b).

- (21) a. *A fogoly újra [AspP haza fog akarni próbálni szökni]*
 the captive again home will want-INF try-INF flee-INF
 'The captive will again want to try to flee home.'
 b. ?*A fogoly [AspP haza fog újra akarni próbálni szökni]*
- (22) a. *A fogoly nem fog újra akarni próbálni [AspP haza szökni]*
 'The captive will not want again to try to flee home.'
 b. *A fogoly nem fog akarni újra próbálni [AspP haza szökni]*
 'The captive will not want to try again to flee home.'
 c. *A fogoly nem fog akarni próbálni újra [AspP haza szökni]*
 'The captive will not want to try to flee home again.'

(21a, b) have identical interpretations. No matter whether *újra* stands outside or inside AspP, it invariably applies to the whole verbal complex. (22a–c), on the other hand, are not synonymous; (22a) means repeated wanting, (22b), repeated trying, whereas (22c), repeated fleeing home. This situation is actually not unexpected, because the minimal sentence unit subject to modification by predicate adverbials is the AspP also in sentences containing only a finite verb.

The c-command domain of a VM raised into a Spec,AspP above VP1 is closed not only for adverbial modification, but also for focusing and negation (which, again, cannot be internal to AspP in the case of a simple verbal predicate, either). Compare (23) and (24): in the former, VM climbing excludes the possibility for the lower VPs to project an FP. In the latter, in which no VM climbing has taken place, any of the VPs can be extended into an FP.

- (23) a. **Mari [AspP el [VP1 fogja [FP CSAK A MAHLER DALOKAT*
 Mary VM will only the Mahler songs
[VP2 akarni [VP3 énekelni]]]]]
 want-INF sing-INF
 'Mary will want to sing only the Mahler songs.'
 b. **Mari [AspP el [VP1 fogja [VP2 akarni [FP CSAK A MAHLER DALOKAT [VP3*
énekelni]]]]]

- (24) a. *Mari* [_{NegP} *nem* [_{VP1} *fogja* [_{FP} CSAK A MAHLER DALOKAT
Mary not will only the Mahler songs
[_{VP2} *akarni* [_{VP3} *el- énekelni*]]]]]
want-INF VM sing-INF
'Mary will not want to sing only the Mahler songs.'
- b. *Mari* [_{NegP} *nem* [_{VP1} *fogja* [_{VP2} *akarni* [_{FP} CSAK A
Mary not will want-INF only the
MAHLER DALOKAT [_{VP3} *el- énekelni*]]]]]
Mahler songs VM sing-INF
'Mary will not want to sing only the Mahler songs.'

VM-climbing is also blocked by negation:

- (25) a. **Mari fel_i szeretne nem kerülni t_i a listára.*
Mary up would.like not get-INF the list-on
'Mary would like not to be on the list.'
- b. *Mari szeretne nem fel_i-kerülni t_i a listára.*

The possibility of inserting arguments and adjuncts between the verbal elements also correlates to a certain extent with whether the AspP c-commands the whole verbal complex or it c-commands only the lexical verb. In the former case, the verbal complex constitutes a closer unit: an argument or an adjunct can marginally intervene only between the finite auxiliary and the nonfinite section of the verbal complex, i.e., between the highest V raised to Tense and Agreement, and the verbal complex proper, containing its trace. (An adjunct is more acceptable in both types of the verbal complex than an argument.)

- (26) a. [?][_{AspP} *Haza fog a fogoly akarni próbálni szökni*]
home will the captive want-INF try-INF flee-INF
'The captive will want to try to flee home.'
- b. ^{??}[_{AspP} *Haza fog akarni próbálni a fogoly szökni*]
- c. * [_{AspP} *Haza fog akarni a fogoly próbálni szökni*]

In case V1 is preceded by a focus or negation, i.e., no VM climbing takes place, intervening material – whether an argument or an adjunct – can appear anywhere in the verbal complex:

- (27) a. [_{FP} ALIGHA *fog a fogoly akarni próbálni haza szökni*]
hardly will the captive want-INF try-INF home flee-INF
'Hardly will the captive want to try to flee home.'
- b. [?][_{FP} *Aligha fog akarni a fogoly próbálni haza szökni*]
- c. [?][_{FP} *Aligha fog akarni próbálni a fogoly haza szökni*]

Nevertheless, the lesser cohesion of infinitival constructions without VM climbing does not mean that they are complex sentences involving embedded infinitival clauses. A verb string consisting of one or more auxiliaries and one lexical verb always forms a verbal complex, whose auxiliary members are subject to the Auxiliary Constraint. An intervening lexical verb turns a verbal complex ungrammatical not only in the presence of VM climbing but also in the presence of focussing or negation:

- (28) a. *A *fogoly* [_{AspP} *haza fog félni akarni szökni*]
 the captive home will fear-INF try-INF flee-INF
 ‘The captive will be afraid to try to flee home.’
 b. %A *fogoly* [_{NegP} *nem fog félni akarni haza szökni*]

Félni ‘to be afraid’, a lexical verb, cuts the verbal string into two verbal complexes in both sentences, and the resulting verbal complexes must satisfy the Auxiliary Constraint separately. (28a) is ungrammatical because the VM of the lexical head of the lower verbal complex cannot be raised into the higher verbal complex, which represents a separate phase. (28b) is only acceptable if *akarni* ‘to want’, the top-most auxiliary of the 2nd verbal complex, is interpreted emphatically. These are the correct neutral versions of (28a) and (28b):

- (29) a. A *fogoly* [_{AspP} *félni fog* [_{AspP} *haza akarni szökni*]]
 b. A *fogoly* [_{NegP} *nem fog félni* [_{AspP} *haza akarni szökni*]]

In (29a), the Spec,AspP position of the higher verbal complex is filled with *félni* ‘be afraid’, there being no other available candidate. *Haza* ‘home’ undergoes VM climbing into the Spec,AspP of the lower verbal complex in both examples.

In sum: a verb string consisting of a finite verb and one or more infinitives represents a verbal complex if it contains a single theta-role-assigning lexical verb, whose arguments the higher verbs share. In the straight order verbal complex the linear order of the verbal elements corresponds to their relative structural prominence: the finite auxiliary is first and the lexical infinitive is last. The Auxiliary Constraint, stating that an auxiliary cannot represent the main assertion, i.e., the highest and leftmost element of the predicate phrase, triggers VM climbing – unless the finite auxiliary is preceded by a focus or a negative particle. VM climbing creates a “tighter” subtype of the straight order verbal complex, because the AspP category it assigns to it represents a syntactic and semantic unit which is closed for logical operators and functional adverbials. This fact has actually been observed in connection with VM climbing across CP, as well. Compare:

- (30) a. *Fel kell,* [_{CP} *hogy* [_{VP} *hívjam Marit*]]
 up needs that call-I Mary-ACC
 ‘It is necessary that I call up Mary.’

- b. **Fel kell*, [_{CP} *hogy* [_{FP} CSAK MARIT *hívjam*]]
 up needs that only Mary-ACC call-I
 ‘It is necessary that I call only Mary up.’
- c. **Fel kell*, [_{CP} *hogy* [_{NegP} *ne hívjam Marit*]]
 up needs that not call-I Mary-ACC
 ‘It is necessary that I don’t call up Mary.’
- d. ?*Fel kell*, [_{CP} *hogy* [_{TopP} *Marit hívjam*]]
 up needs that Mary-ACC call-I
 ‘It is necessary that Mary, I call up.’

The fact that the domain of an AspP is closed for logical operators and functional adverbials must have a semantic explanation: AspP is the smallest semantic unit comprising a predicate and its arguments, which can be modified or quantified upon by clause-level operators only from the outside.

4. The Dutch/West Flemish/Swiss German verbal complex

In the Dutch verbal complex involving one or more auxiliaries and a lexical infinitive, the verbal elements and the verb modifier appear in the same relative orders that were attested in Hungarian. The order of the verbal elements is V1 V2 V3 V4, and the verb modifier precedes either the lexical verb (V4), or the whole verbal complex. That is:

- (31) a. *dat hij had kunnen willen binnen komen*
 that he would’ve could want in come
 ‘that it could’ve been the case that he wanted to come in’
 (V1 V2 V3 VM V4)
- b. *dat hij binnen had kunnen willen komen* (VM V1 V2 V3 V4)

The order illustrated in (31a) is somewhat more constrained than that in (31b): whereas complex verb modifiers are barred from the internal VM position immediately preceding V4, they may appear in the VM position preceding V1. This may mean that a VM can only survive inside the verbal complex if it is incorporated into V4 (cf. Neeleman 1994):

- (32) a. **dat Jan de deur wil heel groen verven*
 that John the door wants very green paint
 ‘that John wants to paint the door very green’
- b. *dat Jan de deur heel groen wil verven*

If the Dutch lexical verb does not select a verb modifier, the straight V1 V2 V3 V4 order of the verbal elements is preserved:

- (33) *dat hij had kunnen willen komen* (V1 V2 V3 V4)
 that he would've could want come
 'that it could've been the case that he wanted to come'

That is, the Auxiliary Constraint in (17) does not force the preposing of V4 into the initial position of the verbal complex – presumably because the locus of main assertion is not at the left edge of the predicate phrase.

Whereas in Dutch nothing but the verb modifier can intervene between the verbal elements of the verbal complex, other West-Germanic languages adopting the same strategy of verbal complex formation, namely, West Flemish and Swiss German (Züritüütsch), do allow intervening constituents – as demonstrated by Haegeman and van Riemsdijk (1986). Consider a Swiss German example:

- (34) a. *das er hät en arie wele chöne singe* (V1 DP V2 V3 V4)
 that he has an aria want can sing
 'that he has wanted to be able to sing an aria'
 b. *das er hät wele en arie chöne singe* (V1 V2 DP V3 V4)
 c. *das er hät wele chöne en arie singe* (V1 V2 V3 DP V4)

Like in Hungarian, a constituent of any grammatical function can appear in the positions of the intervening DP in (34a–c), even though the restrictions that various predicate types impose on the relative order of their arguments also hold for them if they are spread among the elements of a verbal complex – see Haegeman and van Riemsdijk (1986:441). What is more, constituents of operator function can also intervene, see (35), and, like in Hungarian, they have scope over the section of the predicate that they precede and c-command. VM climbing blocks the possibility of inserting operators among the elements of the verbal complex, see (36). (The data in (35)–(36) have been provided by Henk van Riemsdijk (p.c.).)

- (35) a. *...das mer d büecher händ nöme wele tsruk bringe*
 that we the books have no-more wanted back bring
 '...that we did not want to bring the books back any more'
 b. *...das mer d büecher händ wele nöme tsruk bringe*
 c. *...das mer d büecher händ nöme tsruk wele bringe*
 (36) **...das mer d büecher tsruk händ wele nöme bringe*
 that we the books back have wanted no-more bring

5. The inverse order variant of the extended verbal complex in Hungarian

Returning to Hungarian, when the verbal complex is preceded by a focus or a negative particle, the non-finite elements of the verbal complex can also appear in an inverse order:

- (37) *A fogoly HIÁBA fog haza szökni próbálni akarni.*
 the captive in.vain will home flee-INF try-INF want-INF
 'In vain will the captive want to try to flee home.' (V1 VM V4 V3 V2)

In addition to the V1 VM V4 V3 V2 order, illustrated in (37), the V1 V2 VM V4 V3 order is also possible, i.e., the inverse order can only be restricted to the bottom part of the verbal complex:

- (38) *A fogoly HIÁBA fog akarni haza szökni próbálni.* (V1 V2 VM V4 V3)

The elements in the inverse order section of the verbal complex must be strictly adjacent; the straight and the inverse order section, however, can be separated by non-verbal elements. E.g.

- (39) a. *A fogoly nem fog most haza szökni próbálni akarni.*
 the captive not will now home flee-INF try-INF want-INF
 'The captive will not want to try to flee home now.'
 b. **A fogoly nem fog haza szökni most próbálni akarni.*
 c. **A fogoly nem fog haza szökni próbálni most akarni.*

The complement–head order, typical of word internal domains, as well as the strict adjacency of the infinitival elements have lead Brody (1997) and É. Kiss (1999) to the conclusion that the construction in question has been derived by cyclic incorporation, in fact, compounding, hence it represents a complex word.⁴

As a first step of compounding, the VM is incorporated into V4. That is:

- (40) *A fogoly nem fog akarni próbálni [haza szökni]* (Neg V1 V2 V3 [VM V4])

Then, as a next step, the VM+V4 unit is incorporated into V3:

- (41) *A fogoly nem fog akarni [[haza szökni]_i próbálni]_i t_i*
 (Neg V1 V2 [[VM V4] V3])

Cyclic incorporation can stop at this point. The resulting structure was illustrated in (30). Alternatively, V3 (with V4 incorporated into it) is incorporated into V2:

- (42) *A fogoly nem fog [[haza szökni próbálni]_i akarni]_i t_i*
 (Neg V1 [[[VM V4] V3] V2])

Surprisingly, the complex V2 cannot be incorporated into the finite V1, i.e., (43) is ungrammatical:

- (43) **A fogoly* [[*haza szökni próbálni akarni*]_i *fog*] *t_i*.
 (*[[[[VM V4] V3] V2] V1])

It must be the Tense on V1 that blocks incorporation into V1. This hypothesis is supported by the fact that in infinitival constructions involving no finite V, e.g. that in (44) below, cyclic left-adjunction and incorporation can proceed all the way up in the verbal complex.

- (44) [[[*Haza szökni*] *próbálni*] *akarni*] *hiábavaló dolog*.
 home flee-INF try-INF want useless thing
 ‘Wanting to try to flee home is a useless thing.’ (VM V3 V2 V1)

Since the finite verb cannot incorporate the [[[VM V4] V3] V2] complex, the V1[[[VM V4] V3] V2]] string must be saved from the Auxiliary Constraint in some other way: it must be subsumed by an FP or a NegP, as in (42) or else V1 must be interpreted as the negation of a former negation.

The claim that the inverse order section in this type of verbal complex forms a compound, dominated by a single V node, is supported by an interesting piece of morphological evidence. The evidence involves verbal complexes containing an impersonal auxiliary which is subject to the Auxiliary Constraint, such as *kell* ‘need’ or *szabad* ‘may’, and an inflected infinitive. Such infinitives, selected by impersonal predicates, take a dative subject, and bear an agreement marker which agrees in person and number with the dative subject. For example:

- (45) a. *Nekem haza kell men-n-em*.
 I-DAT home needs go-INF-1SG
 b. *Neked haza kell men-n-ed*.
 you-DAT home needs go-INF-2SG
 c. *Neki haza kell men-ni-e*.
 he-DAT home needs go-INF-3SG etc.

In case the phrase *kelleni menni* ‘to need to go’ is combined with a finite auxiliary, the following straight order verbal complexes can be constructed:

- (46) a. *Neki haza fog kelleni men-ni-e*.
 he-DAT home will need go-INF-3SG
 ‘He will need to go home.’
 b. *Neki nem fog kelleni haza men-ni-e*.
 he-DAT not will need home go-INF-3SG
 ‘He will not need to go home.’

If we attempt to construct an inverse order verbal complex, agreement ought to be internal to the resulting compound:

- (47) ?**Neki nem fog haza men-ni-e kelle-ni.*
 he-DAT not will home go-INF-3SG need-INF

People find this construction very marginal – obviously because Hungarian prohibits infixes; it only accepts suffixes. Accordingly, most people apply the repair strategy of placing the agreement suffix to the very end of the compound, as shown in (48). (Others reject the construction in every form.)

- (48) *Neki nem fog haza men-ni kelle-ni-e.*
 he-DAT not will home go-INF need-INF-3SG

The fact that the agreement suffix is forced to be suffixed to the wrong stem is clear evidence of the fact that *[[haza menni] kelleni]* is analyzed as a compound, which is available for suffixation only at its right edge.

6. The German verbal complex

In High German and in several German dialects, the order of the verbal elements in verbal complexes involving a temporal auxiliary and one or more modals is not the VM V4 V3 V2 V1 order expected in an SOV language, but, surprisingly, the V1 VM V4 V3 V2 order also attested in Hungarian. That is:

- (49) a. **dass er herein kommen wollen können hätte*
 that he in come want can had
 ‘that he could have wanted to come in’ (*VM V4 V3 V2 V1)
 b. *dass er hätte herein kommen wollen können* (V1 VM V4 V3 V2)

The construction illustrated in (49b) also has a further peculiarity, in addition to its unexpected word order: the verbal element complementing the temporal auxiliary has the morphological form of an infinitive (*können*), instead of that of a past participle.

Verbal complexes involving a future auxiliary and a modal, or more than one modals also display the word order illustrated in (49b) in many German dialects (obligatorily in Switzerland, and optionally elsewhere). For example:

- (50) *dass er nur ein Problem wird lösen können wollen*
 that he only one problem-ACC will solve can want
 ‘that he will want to be able to solve only one problem’ (V1 V4 V3 V2)

Similar to Hungarian, German also allows partial inversion, i.e. a V1 V2 V4 V3 order:

- (51) a. *dass er hätte können herein kommen wollen* (V1 V2 VM V4 V3)
 b. *dass er nur ein Problem wird wollen lösen können* (V1 V2 V4 V3)

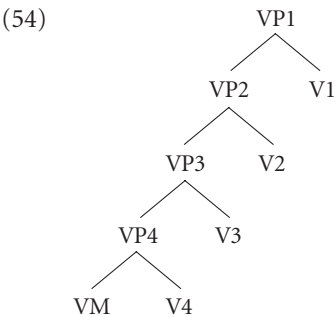
(The V1 V2 V3 VM V4 order, which is acceptable in Hungarian, is ungrammatical in German. This fact, however, does not affect the claim that the German verbal complex in question, and the Hungarian verbal complex derived by cyclic incorporation are parallel. The V1 V2 V3 VM V4 string is acceptable in Hungarian as a straight order verbal complex. In the derivation of the inverse order verbal complex it merely represents an intermediate step, which is never spelled out as such.)

Like in Hungarian, the elements in the inverse order section of the verbal complex cannot be separated by either an argument or an adjunct. At the boundary between the straight and the inverse order sections, however, short elements can intervene. Cf.

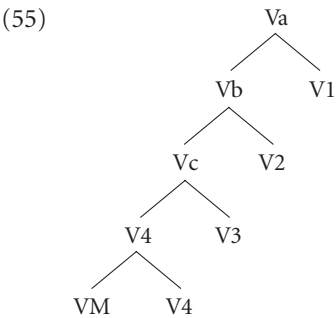
- (52) a. *dass er nur ein Problem wird schnell lösen können*
 that he only one problem-ACC will quickly solve can
wollen
 want
 'that he will want to be able to solve only one problem quickly'
 b. **dass er nur ein Problem wird lösen schnell können wollen*
- (53) a. *dass er nur ein Problem wird wollen schnell lösen können*
 b. **dass er nur ein Problem wird wollen lösen schnell können*

7. Deriving the word order of West Germanic verbal complexes

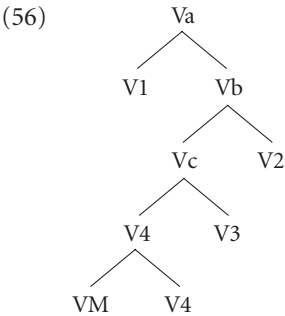
The standard analysis of the West-Germanic verbal complex by Haegeman and van Riemsdijk (1986) derives the straight order and inverse order variants attested in the different Germanic languages from a common OV base. That is, for them the VM V4 V3 V2 V1 order in (54) is the 'straight', base-generated order, and the V1 V2 V3 V4 order is the inverse order (derived literally by inversion).



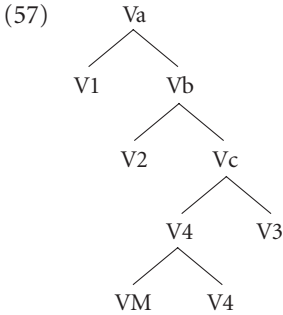
The verbal elements undergo cyclic reanalysis in every West-Germanic language. First the verb modifier is incorporated into V4, then V4 and V3 are reanalyzed as a single verb (marked as Vc in the diagram below), then the resulting Vc is combined with V2 into the complex verb Vb, and eventually Vb is combined with V1 into Va.



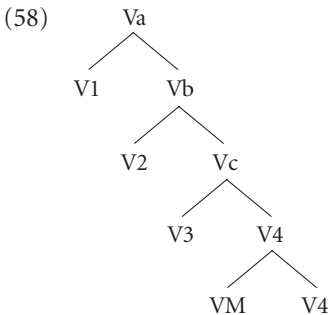
The different orders attested in the different languages result from inversion performed on various segments of the structure in (55). In German V1 and Vb are obligatorily inverted, which yields the order in (56):



The inversion of Vc and V2 is optional; when performed, it yields the order in (57):



In Dutch, West-Flemish, and Swiss German, inversion obligatorily takes place on every cycle involving two verbal elements. The resulting word order is the opposite of the order of the base:



The verb modifier of V4 in structure (54) is not necessarily incorporated into V4. If it does not take part in cyclic reanalysis, it will not be affected by inversion, either, hence it will end up on the left-hand side of the inverted verbal complex – as happened in the Dutch (31b).

In West-Flemish and Swiss German the verbal elements participating in reanalysis and inversion are not necessarily bare verbs but can also be complete or remnant verb projections containing arguments and/or adjuncts.

The proposed derivation, though widely accepted, is not fully convincing, as it derives the various word order possibilities attested in the different West-Germanic languages by an ad hoc operation. Inversion is not an independently motivated operation of Universal Grammar. It is not clear what it is triggered by, and what constraints it is subject to. If it were a standard operation of Universal Grammar, we would expect all sister nodes of the same category to be potential targets of it. In fact, sister nouns, adjectives, or prepositions are not invertible:

- (59) *head master* – **master head*
dark blue – **blue dark*
out of... – **of out...*

It also remains unexplained that in German, for example, inversion is obligatory on the highest level of the verbal complex, is optional on the intermediate levels, and is forbidden on the lowest level.

Furthermore, in German, inversion goes together with an ‘infinitive for participle’ effect, see (49b), which suggests that the two phenomena are related – however, the theory in question does not establish a causal link between them.

The various types of verbal complexes attested in West-Germanic are surprisingly similar to the possible verbal complexes of Hungarian, displaying the same word order, the same alternative positions for the verb modifier, and the same restricted possibilities for intervening material among the verbal elements. If identical constructions displaying identical syntactic properties are derived from different underlying structures by means of different operations, a generalization is likely to be missed.

8. Can the West-Germanic and the Hungarian verbal complexes be derived in parallel ways?

First let us examine if the OV analysis of the West-Germanic constructions in question can be extended to Hungarian. As a first step, let us juxtapose the two possible word order variants of the ‘straight order’ verbal complex in the two languages.

- (60) a. *A fogoly nem fog akarni próbálni haza szökni.*
 the captive not will want-INF try-INF home flee-INF
 ‘The captive will not want to try to flee home.’ (V1 V2 V3 VM V4)
 b. *A fogoly haza fog akarni próbálni szökni.*
 the captive home will want-INF try-INF flee-INF
 ‘The captive will want to try to flee home.’ (VM V1 V2 V3 V4)
- (61) a. *dat hij had kunnen willen binnen komen*
 that he would’ve could want in come
 ‘that it could’ve been the case that he wanted to come in’
 (V1 V2 V3 VM V4)
 b. *dat hij binnen had kunnen willen komen* (VM V1 V2 V3 V4)

According to the standard, OV analysis of Dutch, the VM and V1 of (61b) are in situ, and V2, V3, and V4 have undergone rightward movement. In (61a) the VM also went along with V4 to the right.

The fact that this analysis cannot be extended to (60a, b) becomes clear if we demonstrate that the construction in (60b) is a member of a paradigm. A lexical verb and a preceding auxiliary can share a verb modifier whether they are separated by an infinitival boundary, a finite IP boundary, or a CP boundary, with C containing a complementizer. The verb modifier, selected by the lexical verb, precedes the auxiliary in every case. If a CP boundary intervenes between them, the subordinate and the matrix domains are strictly separated by the complementizer. It is the CP on the right that contains a gap coindexed with the verb modifier on the left, i.e., the construction can only be analyzed as the output of leftward VM movement. The possibility of rightward verb movement is excluded. Observe (62), in which a modal verb attracts a verb modifier – first from an infinitive phrase, then from a finite clause.

- (62) a. *János szét akarja szedni a rádiót.* (VM_i V1 V2 t_i)
 John apart wants take-INF the radio-ACC
 'John wants to take apart the radio.'
- b. *János szét akarja, [CP hogy szedjem a rádiót]*
 John apart wants that take-SUBJ-1SG the radio-ACC
 'John wants that I should take the radio apart.'
- (VM_i V1 [CP C V2 t_i])

In (63) an impersonal modal attracts a verb modifier – first from an infinitive supplied with an agreement morpheme, then from a finite clause without a complementizer, and finally from a finite clause introduced by an overt complementizer.

- (63) a. *Szét kell szednem a rádiót.* (VM_i V1 V2 t_i)
 apart must take-1SG the radio-ACC
 'It is necessary for me to take the radio apart.'
- b. *Szét kell [IP szedjem a rádiót]* (VM_i V1 [IP V2 t_i])
 apart must take-SUBJ-1SG the radio-ACC
 'It is necessary I take the radio apart.'
- c. *Szét kell, [CP hogy szedjem a rádiót]*
 apart must that take-SUBJ-1SG the radio-ACC
 'It is necessary that I take the radio apart.'
- (VM_i V1 [CP C V2 t_i])

The processes illustrated in the (a), (b), and (c) examples under (62) and (63) are clearly parallel. There is no obvious way in which (62c) and (63c) could be analyzed as instances of rightward verb movement: it is the verb modifier in the matrix clause that has been displaced from the embedded clause containing the verb to which it belongs.

On the basis of this evidence I conclude that, if the similar Hungarian and the West-Germanic verbal complexes are indeed to be derived in parallel ways, by identical operations performed on similar underlying structures, they must be derived

from a VO base – as has been argued for by Coppen and Klein (1992), Broekhuis and den Besten (1993), den Dikken (1996), and Zwart (1996). The ‘straight’-order (V1 V2 V3 V4) verbal complex is an extended verb projection in which the lexical V4 is extended by modal and temporal auxiliaries acting as functional heads. The verb modifier merges either with the lexical VP, or with the whole verbal complex. The latter move creates a ‘tighter’ verbal complex, which is closed to intervening operators, and intervening arguments and adjuncts are also marginal. In lack of VM climbing, the verbal complex may be open to intervening material – as is the case in Hungarian, West Flemish and Swiss German. In languages that allow an intervening complement or adjunct among the verbal elements of the verbal complex, the intervening elements are adjoined to the maximal projections merging into a single extended projection.

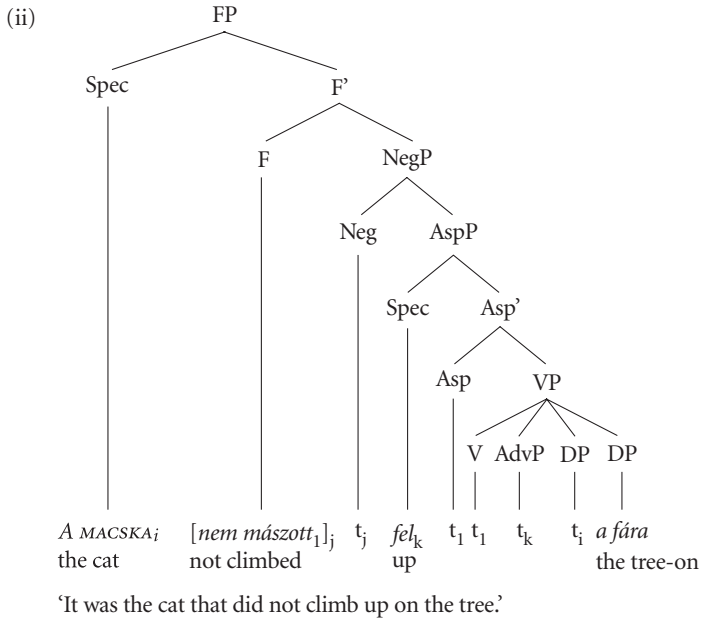
The inverted section of the ‘inverse’-order verbal complex (V1 V4 V3 V2, or V1 V2 V4 V3) is derived by compounding; that is why no adjunct or argument can intervene between its elements. Compounding cannot involve V1, the element having no infinitival suffix but carrying a Tense morpheme. Apparently, a compound cannot contain word-internal inflection. The infinitival suffix does not count as such, but the Tense and Agreement suffixes and the participial suffix are analyzed as inflectional endings. This constraint also explains the ‘infinitivus pro participio’ effect in German, i.e., the obligatory replacement of the participle subcategorized by the perfect auxiliary by an infinitive.

Notes

1. For details, see Bartos (1999).
2. Cf. Piñón (1995).
3. In an alternative analysis, Brody (1990) claims that the FP projection is built on top of AspP, and the verb moves from Asp into the empty F head, crossing the VM in Spec,AspP. In this framework, the verb of a negative sentence moves from Asp to Neg across VM. This assumption raises various problems. First, it predicts a focus-V-VM-XP or Neg-V-VM-XP order, however, the VM need not occupy an immediately postverbal position. Cf.

(i) *János nem mászott a kerítésre fel.*
 John not climbed the fence-on up
 ‘John did not climb up on the fence.’

Second, although head-to-head movement normally involves left-adjunction to the target, the V raised to Neg follows the negative particle. If the NegP is further extended into an FP, what moves on from Neg to F is the *nem*+V string. That is:



Olsvay (2000) pointed out a further problem with (i): in negated elliptical sentences the V can be deleted, with the negative particle spelled out, which provides evidence against a *nem*+V complex. E.g.:

- (iii) A macska fel mászott a kerítésre, a kutya viszont nem ~~mászott fel~~.
 the cat up climbed the fence-on the dog however not ~~climbed up~~
 ‘The cat climbed up on the fence, the dog, on the other hand, didn’t.’

4. Koopman and Szabolcsi (2000) deny this conclusion; they analyze both the straight order construction and the inverse order construction as (remnant) phrasal movement.

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Do preverbs climb?*

Peter Ackema

1. The problem

Hungarian complex verbs behave in a number of respects similarly to their counterparts in a Germanic OV language like Dutch. On the one hand, these verbs are input to morphological derivation, hence they appear to qualify as *bona fide* morphological constructs. On the other hand, the verbal head and the “preverb” (or “particle”) can occur in separate positions in syntax. This means that either syntactic movement rules must be allowed apply to parts of words (Neeleman & Weerman 1993; Ackema 1999a), or the same element from the lexicon must sometimes be realized syntactically and sometimes morphologically (Groos 1989; Ackerman & LeSourd 1997; Ackema & Neeleman 2001), or that a construction can have independent syntactic and morphological representations that do not need to match (Farkas & Sadock 1989; Sadock 1991). Whatever solution is adopted, a desideratum for any theory is that a uniform account should be given for the syntactic behavior of particle verbs in Hungarian and for instance Dutch, as this behavior is so similar in many respects.

A striking instance of this similarity is found in constructions where the particle verb is the complement to one or more auxiliaries of the ‘restructuring’ type, i.e., in constructions in which main verb and auxiliary appear to head a single clause, at least on the surface (Evers 1975) and perhaps already in the base (Wurmbrand 2001; den Dikken this volume). In such constructions, the preverb in both Hungarian and Dutch is sometimes found disjoined from its selecting verb, separated from it by one or more auxiliaries:

- (1) a. *Be akarom csukni az ajtót.*
into want-1SG/DEF close-INF the door-ACC
‘I want to close the door.’
- b. *Hij zou zijn advocaat op willen bellen.*
he would his lawyer up want call
‘He would like to call his lawyer.’

The phenomenon is known as ‘preverb climbing’ in Hungarian (see Farkas & Sadock 1989), a term which indicates that what is held responsible for the separation of the preverb and its selecting verb is leftward movement of the preverb. Recently, analyses for the position of the preverb in the Dutch sentence-final verbal cluster have been given that also involve such preverb climbing (see in particular Koopman & Szabolcsi 1998, 2000), thus satisfying the ideal of giving a uniform account of the construction in both types of language. In accordance with Kayne’s (1994) theory of antisymmetry, these analyses are based on the idea that all languages are underlyingly VO. Dutch and Hungarian would then both have basic Aux-V order between auxiliary and main verb and basic V-PV order between verb and preverb. An order as in (1) would be derived by raising the preverb across the auxiliary, to the specifier position of a functional projection (for instance an Aspect Phrase, see Alberti this volume) that is above the projection headed by the auxiliary.

The assumption that preverbs can climb on their own like this is not unproblematic, however. To see this, consider first the following word order possibilities in a Dutch verb cluster containing a past participle:

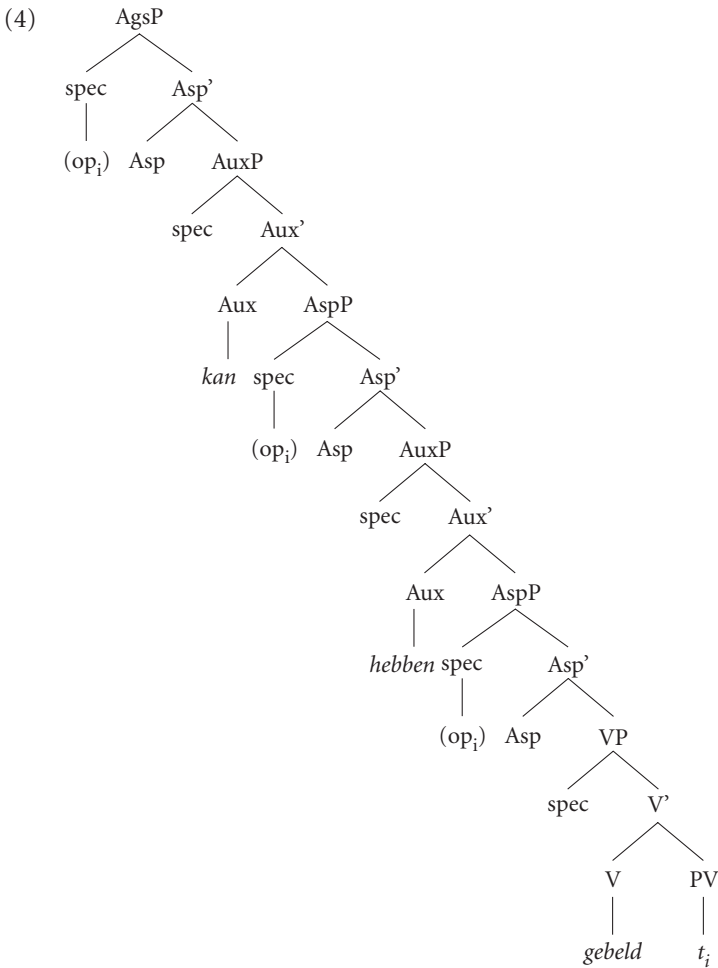
- (2) a. *dat hij haar kan hebben gezien*
 that he her can have seen
 ‘that he may have seen her’
 b. *dat hij haar gezien kan hebben*

Given the VO-base perspective, (2a) must represent the basic order between the verbs. In that case, (2b) indicates that in Dutch past participles can also climb, optionally. V-Aux orders in this perspective are typically derived by assuming that the VP headed by the main verb, after it has been vacated by all other material besides its head, undergoes ‘remnant’ movement to a specifier position in the (extended) projection of the auxiliary.

A problem now arises if the possibilities of preverb climbing and participle climbing in Dutch are combined. Consider a cluster headed by a complex verb in its participial form. If the participle does not climb, its preverb can occur anywhere in the verbal cluster (though orders in which the preverb is not at the beginning of the cluster or directly before its selecting verb are not felicitous for all speakers; see Bennis 1992; Helmantel 1998 for data and discussion). This is illustrated in (3) (*opbellen* ‘up-call’ is ‘to call’).

- (3) *dat hij haar (op) kan (op) hebben (op) gebeld*
 that he her (up) can (up) have (up) called
 ‘that he may have called her’

This indicates that the climbing of the preverb may halt in any of the spec-AspP positions in the structure:



At the same time, it was shown by (2) that the VP headed by the participle in (4) may raise to the left of all the auxiliaries. Combining this with what was just established, namely that the preverb can be in any of the spec-AspP's, the following word order possibilities are now predicted (compare with (3)):

- (5) a. **dat hij haar gebeld kan hebben op*
 b. **dat hij haar gebeld kan op hebben*
 c. **dat hij haar gebeld op kan hebben*

These are impossible, however. Despite the variability of possible preverb positioning in the cluster, there is one hard and fast generalization that holds in OV languages like Dutch and German: the preverb cannot possibly occur to the right of its selecting verb in the cluster.¹ In the ‘VO plus leftward climbing’ perspective, this means that the following constraint must be assumed:

- (6) The preverb must stay to the left of its selecting verb when this verb moves

This is an unlikely demand, however.² In the most clear-cut case of leftward verb movement in Dutch, namely Verb Second of the finite verb, there is no problem at all with stranding the preverb to the right of the verb. In fact, it is obligatory:

- (7) a. *Jan belde zijn advocaat op.*
 Jan called his lawyer up
 ‘Jan phoned his lawyer.’
 b. **Jan op belde zijn advocaat.*

The same can be observed in Hungarian clauses which contain a contrastively focused constituent. This constituent moves to a clause initial position, a movement that must be accompanied by verb movement to the head of the relevant projection (Brody 1990). Again, the preverb is obligatorily stranded, see (8) (where *a házat* is focused; topics, like *a fiú* in (8), can precede the focus position).

- (8) a. *A fiú a házat járta körbe.*
 the boy the house-ACC walked-3SG/DEF around
 ‘It was the house that the boy walked around.’
 b. **A fiú a házat körbe járta.*

If preverb stranding is unproblematic when the finite verb climbs, it is not clear why it is prohibited when the participle climbs in Dutch (5). One possible line of attack would be to assume that V2, in contrast to participle climbing, still involves ‘classical’ head movement rather than remnant VP-movement, and that a climbed preverb can block the latter but not the former. For example, it might be that a preverb in spec-AspP blocks remnant VP-movement by relativized minimality, if spec-AspP is a potential landing site for the latter type of movement as well. If so, however, a new assumption must be made which does not appear to be less problematic than (6) itself. Note that if all spec-AspP positions in (4) must be empty for remnant VP-movement to be possible, it must be possible for the preverb to remain inside this VP (and be taken along under VP-movement). Hence, apparently there is a VP-internal preverbal position available already for the preverb, and the supposed further climbing to spec-AspP can be left undone in case it would have unfortunate consequences for another movement process. Though all this can be

technically implemented, of course, it would seem that it may be worthwhile to pursue an analysis in which (6) need not be assumed in the first place.

The classical alternative for the syntax of Dutch verb clusters is to assume underlying V-Aux (OV) order plus Evers' (1975) operation of verb raising, which adjoins the verb to the right of the auxiliary. Also assuming basic OV order between preverb and verb (i.e. PV-V) for Dutch, the orders in (3) can be derived by verb raising of the participle, which can either take the preverb along or strand it (see Bennis 1992; Evers 2001 for more precise analyses). The generalization needed under this perspective to account for the impossibility of the orders in (5) is the following:

- (9) The preverb cannot raise on its own

(The qualification 'on its own' is added since, as just noted, the complex verb can raise as a whole, including its preverb.) This appears to be a more plausible constraint than (6). It is not contradicted by the stranding of the preverb under V2. More importantly, there is independent evidence for it. Preverbs in Dutch do not undergo other forms of 'climbing' either. Thus, they cannot be scrambled (10a) or topicalized (10b).

- (10) a. *Jan heeft zijn advocaat (*op) gisteren (op) gebeld.*
 Jan has his lawyer (up) yesterday (up) called
 'John phoned his lawyer yesterday.'
 b. **Op belde Jan zijn advocaat gisteren.*
 up called Jan his lawyer yesterday

There is one important class of exceptions: if the preverb can be contrastively focused, there is no problem with topicalizing it (Hoeksema 1991; Wurmbrand 2000):

- (11) *(Angola voert van alles in.) Uit voert het alleen koffie.*
 (Angola carries of everything in) out carries it only coffee
 '(Angola imports all sorts of goods.) It exports only coffee.'

The same holds for Hungarian, and to a larger extent than in Dutch given the obligatoriness of focus fronting in the language. For nonfocused preverbs (9) appears to be well motivated, however. A rationale for why something like (9) should hold, and for why it does not hold in the case of focused preverbs, is given by Wurmbrand (2000).

In short, in the OV plus verb raising perspective the positioning of the preverb in the verb cluster in Dutch is accounted for by a generalization which appears to have some more independent motivation compared to the generalization that is necessary in the VO plus preverb climbing perspective. If this perspective is attractive for Dutch, and if preverb positioning in Dutch and Hungarian is to receive a

uniform account, it is worthwhile to consider in how far the Hungarian data can be derived from an OV plus verb raising account as well. This then is the aim of the present paper.³

Consider for example a sentence like (12), in which the preverb is supposed to climb (from Ackerman & LeSourd 1997:85).

- (12)
- Be

akarom

csukni

az

ajtót.
- into

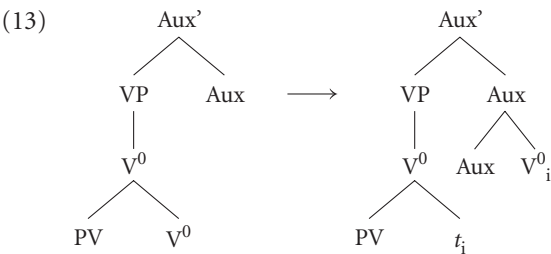
want-1SG/DEF

close-INF

the

door-ACC
- 'I want to close the door.'

Given the OV perspective just outlined, such an example will receive an analysis as in (13) (see also Maracz 1989):



This of course accounts for the observed order PV-Aux-V without having to assume that the preverb is subject to movement, in accordance with (9). It must be shown, however, that an analysis along these lines can account for all the data observed with respect to the discontinuous PV ... V order, since there are some peculiar restrictions on this order. This is the topic of Sections 2–4. In Section 2 I will discuss some conditions on ‘preverb climbing’ that parallel constraints on verb raising in Dutch. In Section 3 the interaction between verb raising and verb movement in clauses with an operator is discussed. Section 4 discusses a distinctly ‘un-Dutch’ property of the Hungarian verb cluster, namely that it is open to other constituents besides the verbs. Section 5, finally, functions as a kind of appendix, containing a brief discussion of the order of the verbs within the cluster in Hungarian.

2. Some parallels between Hungarian and Dutch verb raising

In this section I will discuss some restrictions on preverb climbing (henceforth PVC) noted by Farkas and Sadock (1989) and others, and show how they fit in the verb raising (henceforth VR) picture, noting parallel restrictions on Dutch VR cases.

2.1 Only in restructuring contexts

PVC crosses only auxiliaries (Farkas & Sadock 1989:322).⁴ This is to be expected if PVC is in fact VR, since only auxiliaries trigger VR. This is not to say that in all cases in which a verb takes a verbal complement PVC is possible. This is not surprising either: not in all cases where a verb takes a verbal complement in Dutch does VR occur. In some cases extraposition of the complement is necessary. The distinction between VR and extraposition in Dutch is illustrated in (14).

- (14) a. *dat Alberich [PRO de ring t_i] wilde houden_i*
 that Alberich the ring wanted keep
 ‘that Alberich wanted to keep the ring’
 a'. **dat Alberich t_i wilde [PRO de ring houden]_i*
 b. *dat Wotan Alberich t_i dwong [PRO de ring te vernietigen]_i*
 that Wotan Alberich forced the ring to destroy
 ‘that Wotan forced Alberich to destroy the ring’
 b'. **dat Wotan Alberich [PRO de ring t_i] dwong te vernietigen_i*

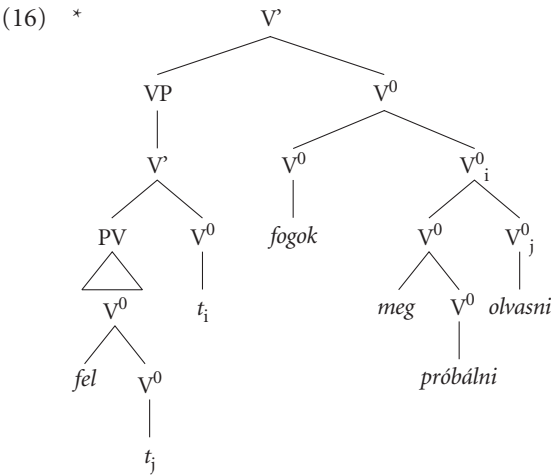
Whether VR or extraposition occurs depends on the matrix verb (see Evers 1975; den Besten & Rutten 1989). So called restructuring verbs, like *willen* ‘want’ in (14a–a’), trigger VR of the head of their infinitival complement, with the effect that the structure behaves as being monoclausal.⁵ A verb like *dwingen* ‘force’, on the other hand, forces extraposition of the entire infinitival complement ((14b–b’)), so there is a biclausal structure. Still other matrix verbs allow for both possibilities. The class of verbs that trigger VR in Dutch and Hungarian respectively is similar, but apparently not identical. (Farkas and Sadock list *fog* ‘will’, *akar* ‘want’, *próbál* ‘try’, *tud* ‘be able to’, *szeret* ‘like’, *szokott* ‘used to’, *kell* ‘must’ and *szabad* ‘may, be allowed to’ as the most common verbs allowing for PVC; these are also VR-triggering verbs in Dutch. Tóth (2000:179ff.), however, discusses differences between some Hungarian modals and their German and Dutch counterparts with respect to their restructuring properties.) Since it is a lexical property of the relevant verbs whether they trigger restructuring (VR) or not, cross-linguistic variation of this type is not very surprising.

2.2 No PVC across another PV

PVC cannot skip an intermediate preverb (Farkas & Sadock 1989:327). This is illustrated by (15).

- (15) **Én fel fog-ok meg-próbál-ni olvas-ni egy könyv-et.*
 I up will-1SG PERF-try-INF read-INF a book-ACC
 ‘I will try to read a book aloud.’

Here the PV *fel* (belonging to *olvasni*) has climbed across the PV *meg* (belonging to *próbálni*). If PVC is VR, then such examples must involve VR to a complex verb, in case of (15) raising of *olvasni* to complex *meg-próbálni* (followed by VR of this entire cluster to *fogok*), as in (16).



Precisely this is known to be impossible in Dutch VR constructions as well. As noted already by Evers (1975), a verb that is complex itself cannot trigger VR of the head of its complement. For example, a verb like *leren* ‘learn’ can trigger either VR or extraposition of its complement, but the particle verb *afleren* ‘off-learn’ (unlearn) derived from it only allows the extraposition option. This difference is illustrated in (17) versus (18).⁶

- (17) a. *dat hij dat soort muziek heeft leren waarderen* (VR)
that he that sort music has learn appreciate
‘that he has learned to appreciate that sort of music’
b. *dat hij heeft geleerd dat soort muziek te waarderen*
that he has learned that sort music to appreciate
‘idem’ (Extraposition)
- (18) a. **dat hij dat soort muziek heeft afleren waarderen* (*VR)
that he that sort music has off-learn appreciate
b. *dat hij heeft afgeleerd dat soort muziek te waarderen*
that he has off-learned that sort music to appreciate
‘that he has unlearned to appreciate that sort of music’ (Extrapos.)

Various accounts for this restriction on VR have been proposed. For example, Neeleman (1994) argues that the impossibility of VR to a complex verb is just one instance of a more general morphosyntactic constraint to the effect that the head

of a complex verbal head may not be complex itself. Van Riemsdijk (1998) argues that a general condition on head-to-head adjunction, of which VR is an instance, is that the heads in question are adjacent. If the matrix verb carries a preverb this blocks the required adjacency of the verbal heads. As noted by van Riemsdijk, this adjacency condition in turn follows if head-to-head adjunction does not in fact involve adjunction (movement), but is a form of reanalysis, namely reanalysis of adjacent nodes as one head. I will come back to this possibility in Section 4. Whatever the ultimate explanation of the phenomenon, it provides some plausibility for the contention that PVC is VR, since the independently known fact that complex verbs cannot trigger VR then also accounts for the impossibility of Hungarian (15).

Note that (19), which is identical to (15) except for not containing a stranded preverb, is possible (Ildikó Tóth, personal communication):

- (19) *Péter fog megpróbálni olvasni egy könyv-(e)t.*
 Peter will-3SG PERF-try-INF read-INF a book-ACC
 'It is Peter who will try to read a book.'

This of course may not involve VR of *olvasni* to complex *meg-próbálni* either, or the account just given for (15) could not be correct. This means that (19) must involve extraposition. The verb *próbálni* 'try' then must allow both for VR of the infinitival head of its complement and for extraposition of the entire complement. Exactly the same is true for its Dutch counterpart *proberen* 'try' (and see also the behaviour of a verb like *leren* 'learn' in (17)):

- (20) a. *dat Mime een zwaard heeft proberen te smeden* (VR)
 that Mime a sword has try to forge
 'that Mime has tried to forge a sword'
 b. *dat Mime heeft geprobeerd een zwaard te smeden*
 that Mime has tried a sword to forge
 'idem' (Extraposition)

The possibility for the complement of *próbálni* to undergo extraposition does not interfere with the account of the impossibility of (15), since that example cannot involve extraposition. It is impossible to extrapose a VP but leave the preverb belonging to the head of this VP stranded, as this would involve movement of a nonconstituent. A stranded preverb indicates that VR has taken place, and VR is not allowed if it involves raising to a complex verb, as in (15)–(16).

In this respect it is interesting to note that weak pronouns that function as object to the infinitive that heads an extraposed clause can apparently be stranded, in instances of the so-called 'third construction' (den Besten & Rutten 1989), see (21b) vs. (21a).

- (21) a. *dat Piet heeft geprobeerd het uit te lezen*
 that Piet has tried it out to read
 ‘that Piet has tried to read it completely’
 b. *dat Piet het heeft geprobeerd uit te lezen*
 that Piet it has tried out to read
 ‘idem’

Den Besten and Rutten argue that this does not involve stranding but climbing of the weak pronoun. The third construction is really just another instance of extraposition of the complete infinitival clause (not VR, witness the lack of IPP in (21), see Note 6), with the constituents remaining behind first having been scrambled out of it. Weak pronouns are independently known to undergo scrambling to the left in Dutch. According to the hypothesis defended here, preverbs do not undergo this type of climbing (see also (10a)). Indeed, preverbs cannot but participate in extraposition that the infinitival clause headed by their selecting verb undergoes. In contrast to the weak pronoun in (21b) they cannot first climb out of this clause, remaining to the left of the matrix verb:

- (22) a. *dat Siegfried heeft geprobeerd de draak af te slachten*
 that Siegfried has tried the dragon off to slay
 ‘that Siegfried has tried to slaughter the dragon’
 b. *?*dat Siegfried de draak af heeft geprobeerd te slachten*
 c. **dat Piet af heeft geprobeerd de draak te slachten*

Hence, the fact that preverbs can occur to the left of the matrix verb in cases of VR is arguably not caused by the preverb climbing to that position either (since it is unclear what would block the derivation of (22b–c) then), but by the possibility of stranding the preverb in its base position in that case. For example, (22b) can be contrasted with (23), in which the IPP effect on *proberen* ‘try’ indicates that *slachten* ‘slaughter’ has undergone VR to this verb, rather than there being extraposition of the entire infinitival complement.

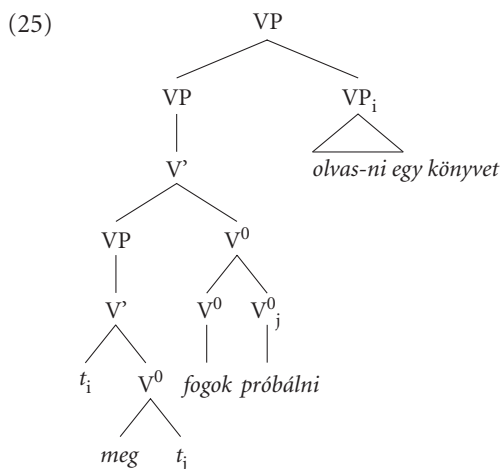
- (23) *?dat Siegfried de draak af heeft proberen te slachten*
 that Siegfried the dragon off has try to slay
 ‘that Siegfried has tried to slaughter the dragon’

2.3 PVC from an intermediate verb

In case there is a sequence of verbs, PVC can not only involve climbing from the lowest verb to the highest auxiliary, but also from an intermediate verb. Farkas and Sadock (1989:327) give the following examples in this connection:

- (24) a. *Én fel fog-ok próbál-ni olvas-ni egy könyv-et.*
 I up will-1SG try-INF read-INF a book-ACC
 'I will try to read a book aloud.'
- b. *Én meg fog-ok próbál-ni olvas-ni egy könyv-et.*
 I PERF will-1SG try-INF read-INF a book-ACC
 'I will try to read a book.'

In these examples there is a sequence of two infinitival verbs following the finite verb to which the PV has apparently climbed. In (24a) the PV *fel* belongs to main verb *olvasni*, but in (24b) the perfectivizing PV *meg* belongs to the intermediate auxiliary *próbálni*. Given the perspective adopted here, (24a) is a simple case of iterative VR: first *olvasni* raises to *próbálni* (stranding the PV *fel* in its base position), then the complex thus derived raises further to *fogok*. However, (24b) cannot involve a first step of VR of *olvasni* to complex *meg-próbálni*, as discussed before. What occurs here instead is a combination of VR and extraposition, namely extraposition of the VP headed by *olvasni* (next to the VR option for the head of the complement to *próbálni* this complement can also undergo extraposition, as argued in the previous subsection), plus VR of *próbálni* (stranding *meg*) to *fogok*; see (25). An entirely parallel example from Dutch is given in (26) (compare this with (18b) where the preverb is not stranded but taken along under VR).



- (26) *dat hij af heeft geleerd dat soort muziek te waarderen*
 that he off has learned that sort music to appreciate
 'that he has unlearned to appreciate that sort of music'

2.4 Adjacency of the climbed PV and the highest Aux

PVC is blocked whenever the PV cannot occur immediately to the left of the inflected auxiliary (Farkas & Sadock 1989:327). One instance of this ban is PVC across a non-auxiliary. This is ruled out directly, as it would have to involve a step consisting of VR to a verb that does not trigger VR (Section 2.1). Another instance occurs when the inflected auxiliary has a PV of its own, as in (27) (from Farkas & Sadock).

- (27) a. *Mari meg-próbál-t ki-men-ni.*
 Mari PERF-try-PAST out-go-INF
 ‘Mari tried to go out.’
 b. **Mari ki meg-próbál-t men-ni*
 c. **Mari meg ki próbál-t men-ni*

This is accounted for as follows: (27a) involves extraposition; (27b) is another instance of the impossibility of complex verbs acting as trigger for VR (Section 2.2); (27c) cannot be derived as it would have to involve infixing a complete verb *kimenni* into *megpróbálni* before VR of *menni* takes place.

In general, if climbing PVs are in fact stranded PVs, left behind by their verb which forms a cluster with the verbs immediately on its right, this implies that no other elements should intervene between the PV and the verb cluster. This is correct. In fact, since it is assumed the verbs form a cluster after VR, an even stronger prediction seems to be made, namely that no elements should intervene anywhere in the sequence of PV and verbs. This is not correct: the cluster itself is permeable in Hungarian. This issue is discussed in Section 4.

2.5 No coordination below a climbed PV

If PVC involves actual climbing of the preverb, it should be possible to apply this movement across the board. In other words, it should be possible to coordinate two VPs headed by verbs that select for the same preverb below one instance of this preverb. If, in contrast, apparently climbed PVs are stranded in their base position after their selecting verb has raised, the PV is in fact the lowest element in the structure – hence, any coordination below it should be impossible. The data confirm the latter prediction, see (28), from É. Kiss (this volume). Again the same holds for Dutch, see (29).

- (28) **János szét akarja vágni a rajzot és fogja szedni a rádiót.*
 John apart wants cut the drawing-ACC and will take the
 radio-ACC

‘John wants to cut the drawing to pieces and will take the radio apart.’

- (29) **dat Jan iets in gaat kopen voor z'n moeder en zal pakken voor z'n vader*
 that John something in goes buy for his mother and will
 pack for his father
 ‘that John goes to buy something for his mother and will pack it for his father’

It might seem that (28) is out because the stress avoiding property of the auxiliary in the second conjunct is violated, this conjunct forming an independent prosodic domain with stress falling on the left edge (see Szendrői this volume; cf. below). However, this could in principle be avoided by contrastively stressing the infinitive, while this does not improve the construction, as (30a) shows. Note that there is nothing wrong with stressing the verbal part of a particle verb as such: compare (30a) with (30b), where both verbs have their own preverb (thanks to Kriszta Szendrői for these examples). Hence, the impossibility of (28) and (30a) is not caused by any wrong prosody-syntax connection. Instead, it shows that when the preverb clearly *is* in a position to which it must have climbed, above the VP, the result is ungrammatical.

- (30) a. **János szét akarja VÁGNI a RAJZOT és fogja SZEDNI a RÁDIÓT.*
 b. *János szét akarja VÁGNI a RAJZOT és szét fogja SZEDNI a RÁDIÓT.*

2.6 A difference with Dutch: PVC across an intervening complementizer

É. Kiss (this volume) provides a piece of data that at first sight appears to be incompatible with an analysis of PVC in terms of preverb stranding by VR. In contrast to Dutch, the complementizer *hogy* ‘that’ can intervene between the preverb and its selecting verb. This appears to indicate that the preverb does actually climb out of the embedded clause into the matrix clause:

- (31) *Szét kell hogy szedjem a rádiót.*
 apart must that take-SUBJ.1SG the radio-ACC
 ‘It is necessary that I take the radio apart.’

However, this is only possible if *hogy* and the verb selecting the PV are adjacent:

- (32) **János szét akarja hogy nemsokára szedjem a rádiót.*
 John apart wants that soon take-SUBJ.1SG the radio-ACC

É. Kiss argues that this indicates that C and the embedded inflected verb must merge (form one complex [_I C [_I V-I]] node) for PVC to be possible. But if *hogy* must indeed for some reason be incorporated into the V-I complex in cases like (31), the argument against VR plus PV stranding is not conclusive: the complex verbal node that incorporates the complementizer can raise as a whole to the matrix auxiliary, stranding the PV. Thus, (31) can be analyzed as follows:

- (33) PV t_i Aux [_I C [_I V-I]]_i DP

In fact, something similar can be observed in Dutch after all, in cases involving the distinct infinitival I head *te* ‘to’. This too forms a complex with the verb that can raise as a whole. Hungarian then only differs in being able to also incorporate C heads into the verb.

- (34) *dat Jan haar op t_i probeert [te bellen]_i*
 that John her up tries to call
 ‘that John tries to call her’

3. Interaction of VR and V-to-F movement

Farkas and Sadock (1989:328) note that PVC seems to be blocked when there is a focused constituent, negation or *wh*-element in the matrix clause:

- (35) a. *Mari TEGNAP próbál-t fel-olvas-ni.*
 Mari yesterday try-PAST up-read-INF
 ‘It was yesterday that Mari tried to read aloud.’
 b. **Mari TEGNAP fel próbál-t olvas-ni.*
 Mari yesterday up try-PAST read-INF
- (36) a. *Mari nem próbál-t fel-olvas-ni.*
 Mari not try-PAST up-read-INF
 ‘Mari didn’t try to read aloud.’
 b. **Mari nem fel próbál-t olvas-ni.*
 Mari not up try-PAST read-INF

In these circumstances the PV “must be found immediately before the verb that it is lexicosemantically associated with” (Farkas & Sadock 1989:328), as in the (a) examples of (35)–(36).

If there is only a single verb in case there is focus/negation/wh, its preverb must occur to its right, as in (37). But in case the complex verb is the complement to an auxiliary such inversion does not take place, see (38) (compare with (35a) and (36a)).

- (37) a. *A fiú nem járta körbe a házat.*
 the boy not walked-3SG/DEF around the house-ACC
 'The boy didn't walk around the house.'
- b. *A fiú a HÁZAT járta körbe.*
 the boy the house-ACC walked-3SG/DEF around
 'It was the house that the boy walked around.'
- (38) a. **Mari TEGNAP próbál-t olvas-ni fel*
 Mari yesterday try-PAST read-INF up
- b. **Mari nem próbál-t olvas-ni fel*
 Mari not try-PAST read-INF up

Data as in (37)–(38) follow straightforwardly from the proposal by Brody (1990) and others that, in case there is an operator in the clause (and a focused constituent functions as such in Hungarian), this moves to a designated clause-initial position, say spec-FP. To prevent this projection from having an empty head, this operator movement is accompanied by movement of the finite verb to F, just as in 'residual V2' cases in English *wh*-questions, for example. V-to-F of the finite main verb in (37) strands the preverb of this verb. In (38) it is the finite auxiliary that undergoes V-to-F, which means the main verb and its preverb should just keep their basic PV-V order. Given the V-to-F analysis for (37), data as in (35)–(36) versus (38) then simply fall out from combining this analysis with the analysis for PVC in terms of VR of the previous section. In particular, (35a) and (36a) are derived as follows.

First, VR of main verb to auxiliary applies, stranding the PV to the left of the auxiliary. Then the auxiliary is moved out of its VP, to F, leaving the PV behind. This is illustrated in (39a). Note that the order that results is indistinguishable, at least if only two verbs are involved (the complex main verb and one auxiliary), from the order that results from having the complex verb undergo VR in its entirety (including the PV), as in (39b). That is, in this case it can actually not be seen whether there is preverb 'climbing', i.e. stranding, or not.

- (39) a. [_{FP} OP [_F Aux_i] [_{VP} [_{VP} [_V PV t_j]] t_i V_j]]
- b. [_{FP} OP [_F Aux_i] [_{VP} [_{VP} [_V t_j]] t_i [PV V]_j]]

In short, that the PV does not invert with the main verb in these cases ((38)) is because it is the finite auxiliary, not the main verb, that undergoes V-to-F. This means the order in (38) could only arise as a consequence of postposing the PV on

its own, precisely the type of movement which is assumed to be impossible here (see (9)); compare the parallel impossibility of Dutch (5) again.

Given this analysis, it is predicted that in principle the PV need not always end up immediately before the verb it lexicosemantically belongs to in case the finite auxiliary undergoes movement. In particular, this need not be so if there is an intermediate auxiliary present. In that case, if the PV of the main verb is taken along under VR it will still end up directly before this verb, but if the PV is stranded by VR then the intermediate auxiliary will intervene, also if the highest (finite) auxiliary is moved out of the way. Schematically:

- (40) FOCUS Aux₁i... PV t_k t_j t_i [Aux₂ V_k]_j

This is indeed possible in Dutch, as illustrated by (41), where the highest auxiliary has undergone V2:⁷

- (41) *Siegfried zal de draak vanavond weer af moeten slachten.*
 Siegfried will the dragon tonight again off must slay
 'Siegfried will have to slaughter the dragon again tonight.'

In other words, it is predicted that, in contrast to the order in (42a) (see (35b)), the order in (42b) should in principle be possible in Hungarian. In contrast, a theory which states that PVC is always blocked when the matrix clause contains a focused constituent (or other operator) predicts that (42b) is just as bad as (42a). Both theories account for the possibility of (42c), the present one by the option of having the complete complex verb undergo VR (compare also Note 7).

- (42) a. *FOCUS PV Aux V
 b. FOCUS Aux₁ PV Aux₂ V
 c. FOCUS Aux₁ Aux₂ PV V

An example of (42b) is (43a) (whereas (42c) is instantiated by (43b)).

- (43) a. ^(*)*Mari HOLNAP fog fel próbálni olvasni egy könyvet.*
 Mari tomorrow will up try-INF read-INF a book-ACC
 'It is tomorrow that Mari will try to read a book aloud.'
 b. *Mari HOLNAP fog próbálni fel olvasni egy könyvet.*

As it turns out, there seems to be an idiolectal split regarding the possibility of (42b)/(43a): some speakers accept it but others do not (Michael Brody, Daniel Margocsy, Kriszta Szendrői, Ildikó Tóth (personal communication)). What this means is that at least for a number of speakers a restriction holds to the effect that, if possible, the parts of a complex verb should not be separated. Under the assumption that PV and verb are base generated as a complex V⁰ (see Neeleman 1994; Ackema & Neeleman 2001), this restriction can be stated as a ban on ex-

corporation of the verbal head of this complex predicate. However, above I have analysed PVC precisely as the result of the PV being left behind by its verb, which undergoes VR. Apparently, then, in particular contexts there is an overriding factor that forces PV stranding (by V excorporation).

What this factor may be is discussed by Szendrői (2001) (see also Szendrői this volume). Following Komlósy (1992), É. Kiss (1998) and Dalmi (1999), Szendrői argues that the crucial property of those auxiliaries that trigger PVC out of their complement is that they cannot carry neutral sentential stress. Main stress in Hungarian is assigned on the left edge of the clause, so to the first constituent (barring initial topics, which presumably are in a dislocated position and do not form one prosodic domain with the rest of the clause). This means that there must always be something in front of a stress-allergic auxiliary to prevent it from getting stress. In case there is a focus/negation/*wh*-operator this shields the auxiliary from the stress position. Whether or not the PV is taken along under VR or is stranded ((43a) versus (43b)) is immaterial in that case, and as noted speakers then apparently go either way in accepting stranding (V excorporation) or not. But in case there is no operator, the PV must occur in front of the stress-allergic auxiliary to prevent its getting stress.

Thus, when no clause-initial operator is present, VR of the main verb to the right of a stress-allergic auxiliary puts this auxiliary in danger of ending up in the leftmost position in the clause, which is the main stress position. This would lead to ungrammaticality, as in (44) (where *én* is a topic, which as noted does not attract stress away from an element that follows it).

- (44) **Én fog-ok fel próbál-ni olvas-ni egy könyv-et.*
 I will-SG up try-INF read-INF a book-ACC

To prevent this, the PV is stranded by VR, i.e. there is PV ‘climbing’.

To summarize, PVC is PV stranding. In clauses without an operator stranding is obligatory. In clauses with an operator it is in principle optional; it seems that in some idiolects stranding still is possible whereas in others it is not. In case there is just one auxiliary in a clause with an operator, it cannot be shown whether the main verb strands its PV under VR, since V-to-F movement of the auxiliary will lead to the same word order in both cases ((39a)–(39b)) – hence the observation that PVC is apparently ‘blocked’ when there is an operator.


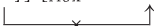
Some extra evidence for this view comes from the observation by Koopman and Szabolcsi (2000) that negation or focus in the *embedded* clause blocks PVC as well:

- (45) a. **Haza fogok akarni nem menni.*
 home will-1SG want-INF not go-INF
 ‘I will want not to go home.’

- b. **Haza fogok akarni (csak) most menni.*
 home will-1SG want-INF (only) now go-INF
 'I will want to go home NOW.'

As noted by Brody (1990), V-to-F movement is optional in infinitivals. Szendrői (2001) argues that this follows from the ways the empty F head can be licensed (under the assumption that empty heads may not remain empty but must be licensed by lexical material at some point in the derivation, see Grimshaw 1997; Koopman & Szabolcsi 2000). In main clauses V-to-F licenses the F head, and this is an option in embedded infinitivals as well. However, for the latter there is another possibility of licensing the empty F head: moving this head itself to the higher selecting V.

Crucially, under both options VR of the embedded verb is excluded. In case the embedded verb moves to F it cannot undergo VR any longer as there is an adjacency restriction on this operation: a verb can only raise from its base position, adjacent to the matrix auxiliary to which it must raise (see van Riemsdijk 1998 for discussion; see also Section 4 below). Hence, (46a) is impossible. In case F moves to the matrix V the higher head is complex, which means it can no longer act as host for a raised verb, as noted above in Section 2.2.⁸ Hence, (46b) is not a possible option either.

- (46) a. $[[FP \dots F-V_i \dots [VP \dots t_i]] AUX]$

 b. $[[FP \dots t_i \dots [VP \dots V]] [AUX \text{ AUX-F}_i]]$


Given the impossibility of VR in this case, the only way to save a structure with focus etc. in the embedded clause is to have extraposition of the complete embedded FP, which precludes PV stranding as in (45) (compare Section 2.2). However, extraposition of the embedded FP, including the PV, would lead to the matrix auxiliary occupying the main stress position in its clause, which is also excluded. The result is that "these particular sentences do not have grammatical neutral orders" (Koopman & Szabolcsi 1998: 131). Only if there is something else in front of the finite auxiliary, like a focussed or negated constituent, are they possible, as in (47). Note that indeed there is extraposition of the complete embedded clause, not VR plus PV stranding, as predicted.

- (47) a. *Én fogok akarni [nem hazamenni]*
 I will-1SG want-INF not home-go-INF
 'It is me who will want to not go home.'

- b. *Nem fogok akarni* [(csak) most hazamenni]
 not will-1SG want-INF (only) now home-go-INF
 'I will not want to go home NOW.'

4. Scrambling into the verbal cluster, inversion, and reanalysis

In this section I will discuss a few phenomena which at first sight appear to be problematic for the OV plus VR analysis as outlined in Sections 2–3. I will argue that the relevant data can be explained if the type of head movement under discussion (VR) is in fact not movement but a process of reanalysis, as proposed by Haegeman and van Riemsdijk (1986).⁹

Next to the parallels noted above, there is also an important difference between the Dutch and Hungarian verb clusters. In Hungarian, in contrast to Dutch, full XPs can appear anywhere in the verbal cluster that is supposed to be derived by VR. Even the matrix subject can occur in between the sequence of verbs, as in (48a) (from Koopman & Szabolcsi 1998). In contrast with this permeability of the cluster is the fact that no XP can appear in between a stranded PV and the verbal cluster, see the possible positions for an XP in (48b) (Kriszta Szendrői, p.c.).

- (48) a. *(Mari) be fog (Mari) kezdeni (Mari) akarni (Mari)*
(Mari) in will (Mari) begin-INF (Mari) want-INF (Mari)
menni (Mari).
 go-INF (Mari)
 'Mari will begin to want to go in.'
- b. *Szét (*XP) fogja (XP) akarni (XP) kezdeni (XP)*
 apart will-3SG want-INF begin-INF
szedni a rádiót.
 take-INF the radio-ACC
 'He will want to begin to take apart the radio.'

Any account of such data must take into consideration why head-to-head adjunction (in contrast to substitution) usually does *not* allow for intervening elements, since only when we know the reason for this is it possible to see whether independent properties of Hungarian account for its allowing things like (48).

On the basis of various instances of this type of movement in different languages, van Riemsdijk (1998) posits as an absolute condition on any head movement that involves adjunction to a higher head that the moving head and the host be adjacent. If this type of head adjunction really were movement, that would be a rather curious condition, as this kind of linear adjacency condition between source and target does not seem to hold for any other kind of movement (in fact, an

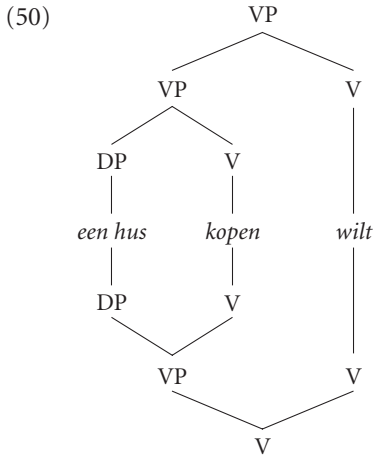
almost opposite condition on movement has been defended, namely the ‘no vacuous movement’ hypothesis, compare Chomsky 1986). In contrast, as noted by van Riemsdijk, the adjacency condition on head-to-head adjunction is not unexpected if this process involves reanalysis rather than movement, as proposed by Haegeman and van Riemsdijk (1986). Reanalysis involves assigning a different analysis to the same string of words; by its very nature the process does not alter the word order of the string. Given that crossing branches are prohibited, it follows that only adjacent nodes can be reanalyzed as one new node.¹⁰

Now, although auxiliary and main verb must be adjacent in cases of VR, their order can and in Dutch usually does change: on the surface they can (in case the cluster consists of two verbs) or must (in case the cluster consists of more than two verbs) appear in VO (Aux-V) order. Accordingly, Haegeman and van Riemsdijk (1986) assume that after reanalysis, which is obligatory, there can be either obligatory or optional inversion of the daughter nodes of any reanalyzed node (see also Williams this volume, for a similar proposal). This process can be sensitive to the number of verbs and to the particular auxiliaries in the cluster. Since there is a great amount of crosslinguistic variation in this respect, it must be stipulated per language which nodes are targeted by inversion and which are not.¹¹

As argued by Haegeman and van Riemsdijk, reanalysis can also target a higher projection level of the embedded verb. This possibility accounts for cases of Verb Projection Raising (VPR), as it occurs in for example West Flemish and certain Swiss German dialects. An example from West Flemish is given in (49).

- (49) *da Jan wilt een hus kopen*
 that Jan wants a house buy
 ‘that Jan wants to buy a house’

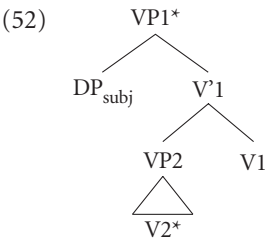
This example receives the analysis in (50). The V node of the auxiliary and the V’ node of the embedded verb and its complement DP are reanalyzed as one complex V node. This node is targeted by inversion, resulting in the order in (49).



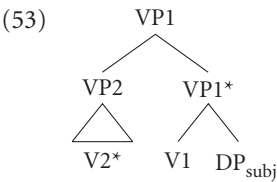
The formal definition of reanalysis which incorporates the possibility of both VR and VPR is given in (51).

- (51) *Reanalysis* (Haegeman & van Riemsdijk 1986:423)
 If the representation of a sentence contains the line $X V^i_q V_r Y$, where $0 \leq i \leq 2$ and V_r is a VR verb, then add the line $X V_x Y$ to that representation

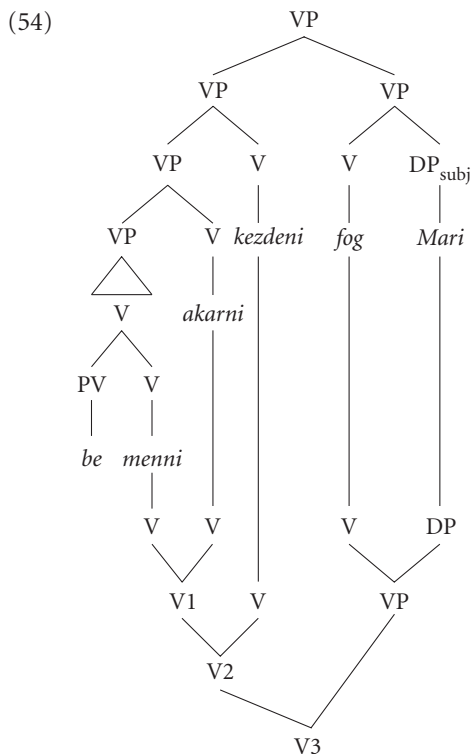
Let us now turn back to the problem posed by Hungarian (48). Given that higher projections of the embedded verb can take part in reanalysis, in principle there is no reason why a higher projection of the *matrix* verb cannot be involved in reanalysis as well. The null hypothesis is that in the input for reanalysis there is no particular restriction on the projection level of V_r in (51), just like there is no such restriction for V_q . In other words, let us replace V_r by V_r^i in this definition. In languages with configurational VPs, like Dutch, it is impossible for independent reasons that a higher projection of the matrix verb is involved in reanalysis. This is so because in such languages this higher projection of the matrix verb will also include the complement VP, which in turn includes the node with which the projection of the matrix verb is to be reanalyzed. In other words, the nodes that are to be reanalyzed are in an inclusion relation, rather than an adjacency relation, which makes reanalysis impossible. Thus, in (52) VP1 cannot be reanalyzed with V2 (or with VP2), since this representation does not contain the line X V2 VP1 Y (cf. (51)), but rather X VP1 Y with VP1 dominating V2.



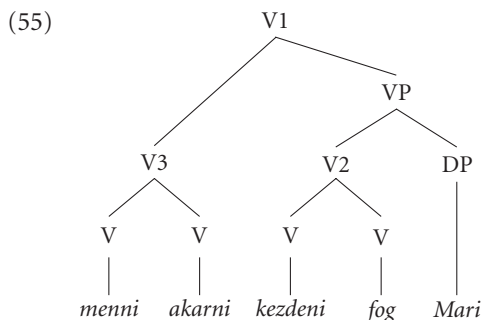
However, it is an independently given property of Hungarian that it has non-configurational VPs (see É. Kiss 1987 and references cited there). In particular, there are no subject-object asymmetries with respect to for instance binding or crossover phenomena, as they are known from English. Apparently, complements can optionally be generated above the subject position. This must then also hold for complement VPs; it must hence be possible to generate these higher up in the matrix VP as well, in particular above the subject of the matrix verb. In that case, reanalysis of the embedded verb and a higher projection of the matrix verb actually is possible, since these nodes can now be adjacent:¹²



Hungarian (48a) can then be analyzed as follows. The order in which *Mari* is in between *fog* and *kezdeni* is derived when the complete matrix VP (as well as the V nodes of all intermediate auxiliaries) is targeted by reanalysis, and inversion applies to all reanalyzed nodes, namely V1, V2 and V3 in (54):



The order in which *Mari* is at the end (or beginning, depending on where it is merged in the first place) of the complete sequence is derived when only the matrix V itself is input to reanalysis – the subject is not part of the cluster in that case. The other two orders can be derived only by noncyclic (though not countercyclic) applications of VPR/reanalysis. For instance, first applying reanalysis to matrix *fog* and embedded *kezdeni* and only then applying it to the node of the matrix VP, which now includes *kezdeni*, derives the order in which *Mari* is in between *kezdeni* and *akarni*, as illustrated in (55) (which for reasons of space only gives the reanalyzed structure; the nonreanalyzed one is of course identical to that in (54); inversion targets all reanalyzed nodes, V1, V2 and V3, again). Noncyclic VR has been argued to be necessary anyway to account for orders in Dutch in which a preverb occurs somewhere in the middle of the verb cluster (compare Section 1), see Bennis (1992). If noncyclic VR is possible, noncyclic VPR is to be expected as well.



The permeability of the Hungarian verb cluster versus the impermeability of the Dutch one thus follows from an independently given difference between the two languages, namely that Hungarian but not Dutch has nonconfigurational VPs, if indeed PVC is V(P)R and V(P)R is reanalysis.

The fact that, in contrast to the permeability of the Hungarian cluster itself, no material can occur in between a stranded PV and the cluster (the starred XP in (48b)) also follows. Such material occurs in between two nodes that should undergo reanalysis. Note that the PV indicates the source position of the embedded verb, since it itself may not take part in the reanalysis but must be stranded in case there is no focus/neg/wh operator, see Section 3. The demand that the nodes that are to be reanalyzed must be adjacent hence blocks this option (compare also Note 12).

A final phenomenon to be discussed in this section is the following. If the matrix clause contains a focus/negation/wh-operator, the verbs can occur in ‘inverted’ order, that is, inverted from a VO perspective, so in OV (V-Aux) order. In that case, the cluster suddenly is impermeable, and PVC is impossible (Koopman & Szabolcsi 2000). The following data illustrate this (the adjacency of the focused constituent and the finite auxiliary follows from V-to-F and is not relevant here):

- (56) a. *PÉTER* (*XP) *fogja* (XP) *akarni* (XP) *kezdeni* (XP) *szét*
 Peter will want-INF begin-INF apart
 (*XP) *szedni* a *rádiót*.
 take-INF the radio-ACC
 ‘It is Peter who will want to begin to take apart the radio.’
- b. *PÉTER* (*XP) *fogja* (XP) *akarni* (XP) *szét* (*XP) *szedni* (*XP) *kezdeni*
 a *rádiót*.
- c. *PÉTER* (*XP) *fogja* (XP) *szét* (*XP) *szedni* (*XP) *kezdeni* (*XP) *akarni*
 a *rádiót*.

Given the above analysis, ‘inversion’ is in fact absence of inversion, since the verbs are base generated in V-Aux order; it is the Aux-V orders that are derived via in-

version. This directly accounts for the impossibility of PVC in these cases. Since PVC is really stranding of the PV after VR (reanalysis plus inversion), there is no PVC when there is no inversion. Put differently, the order PV-XP-V-Aux does not occur since V has not undergone VR here and PVs cannot raise on their own (the basic hypothesis of Section 1). The fact that the cluster is impermeable when ‘inversion’ (lack of inversion) occurs is explained as well. As discussed, the adjacency condition on VR/reanalysis excludes material between two nodes that are to be re-analyzed as one. The only way to get intervening material in the cluster is by having reanalysis target higher projections that include this material, and then applying inversion to the reanalyzed node, as in cases of VPR (see above). But since V-Aux order is an indication of absence of inversion, no material can end up in the cluster in this way then.

However, this leaves open the question why the possibility of not applying inversion correlates with the presence of a focus/negative/*wh*-operator in the matrix clause. It seems that the order in the cluster depends on whether or not its head, the finite verb, moves out of it (by V-to-F) or not. That is an unheard of condition as far as Germanic verb clusters go. Here, the ordering restrictions on the other verbs remain exactly the same in case the highest verb undergoes Verb Second, for instance. This may indicate that the structures involving surface OV order in Hungarian might be derived in an altogether different way than by syntactic reanalysis (the only difference with the VO structures then being that inversion fails to apply). Indeed, there are indications that they are morphologically derived complexes, in other words, compounds; see Bartos (this volume) for argumentation. For example, Hungarian OV clusters can be input to further derivational morphology, in sharp contrast with Germanic verb clusters. Of course, this as such does not yet answer the question of the interdependence between the presence of focus etc. and the possibility of using these compounds. At the end of the following section I will consider in how far this correlation can be derived.

5. On the internal order of the Hungarian verb cluster

If the surface OV orders between verbs are indeed instances of compounding, a description of the ordering constraints on the Hungarian verb cluster becomes relatively straightforward, as I will show in this section. In particular, the following constraints, already discussed in Sections 3–4, determine the order in the Hungarian cluster:¹³

- (57) a. Invert!: All reanalyzed nodes are targeted by inversion.
- b. *Excorporation (or *PV-stranding): Do not separate a verb from its preverb

- c. *Stress on Aux: Do not leave a restructuring Aux in the clausal main stress position

I assume that, in cases in which these constraints impose conflicting demands on ordering, one will take precedence over the other (as in optimality theory). In this respect (57c) is imperative, thus accounting for exceptions to (57a) and (57b). This accurately describes all observed orderings. Consider how.

Suppose there are four verbs in the cluster, base generated in OV order, i.e. in 4-3-2-1 order with 4 the lowest and 1 the highest (finite) verb. In case there is an operator like focus in the main clause, verb 1 undergoes V-to-F. The order of the others is determined by (57a) (Invert!), resulting in:

- (58) FOCUS 1 ... 2 3 4 (← (57a))

In case there is a preverb on for instance 4, this is taken along under VR because of (57b):

- (59) FOCUS 1 ... 2 3 PV 4 (← (57b) plus (57a))

Those idiolects that also allow the order FOCUS 1 ... PV-2-3-4 (see Section 3) can then simply be described as lacking the demand in (48b) (on a par with Dutch, where it is also optional to either take the PV along under VR or strand it), or, more in line with optimality theory, as having (57b) ranked below a condition that does not want the PV to be displaced at all, like the general ban on movement Stay.

A conflict between (57b) and (57c) arises when there is no operator present that shields the finite auxiliary from the clause initial, main stress, position; in that case (57c) overrules (57b) resulting in (60) (where PV is a preverb of 4):

- (60) PV 1 2 3 4 (← (57c)>>(57b), plus (57a))

In case there is no PV present, (57a) is violated in order to satisfy (57c), resulting in the effect that the lowest verb (the main verb) seems to 'become a PV' (cf. Koopman & Szabolcsi 2000):

- (61) 4 1 2 3 (← (57c)>>(57a) gives 4-1; rest (57a))

It is also possible to establish a ranking between (57a) and (57b): the impossibility of (62), compared to (60), indicates that (57a)>>(57b):

- (62) *PV 4 1 2 3 (← (57a)>>(57b))

Let us now include the OV ordered compounds in the picture. These are treated as one V by the constraints above, resulting in 'mixed' (VO and OV) order in the cluster. For example, the order in (63) is derived if 4 and 3 form a compound; (57a) then targets 2 and this compound (the underlying order is [4-3] 2 1, with 1 undergoing V-to-F).

(63) FOCUS 1 ... 2 [4-3]

From the compounding analysis for the surface OV-complexes it also follows that, as noted by Koopman and Szabolcsi (2000), no VO order can occur in the middle of such complexes. An order as in (64) is impossible.

(64) *FOCUS 1 ... 5-2 3-4

What happens here is that a compound, namely [5-4], is split by a syntactically derived verbal complex 2-3. Now, the only things that can possibly split up words are infixes, and maybe even clitics (Harris 2000), but a syntactically complex phrase splitting up a word is unheard of; compare for instance the following examples from Dutch:

- (65) a. *donkergroen*
 dark-green
 a'. **donker heel erg groen*
 dark very much green
 b. *stoomboot*
 steam-boat
 b'. **stoom oud wrak boot*
 steam old wreck boat

Indeed, the same can be shown for Dutch verb clusters, since Dutch has a few V-V compounds as well: *zweefvliegen* 'hover-fly' ('fly in a glider'), *hoesteproesten* 'cough-sneeze'. These too have to be treated as one V in the formation of the cluster and cannot be split by syntactically derived parts of the cluster:

- (66) *dat ik (*zweef) zou (*zweef) willen (*zweef) kunnen*
 that I (hover) would (hover) want (hover) can
 zweef-vliegen
 hover-fly
 'that I would like to be able to fly a glider'

If the surface OV orders are instances of compounding, an explanation presents itself for a problem left open in the previous section, namely why there should be a correlation between the possibility of surface OV order and the presence of focus (or other operators). Compounds inherit properties of their heads. For example, the head of a verbal compound determines the type of inflection the compound can take (e.g. regular or irregular), despite the fact that this inflection structurally attaches outside the compound (see Hoeksema 1986; Stump 1991 for discussion); in nominal compounds the head determines things like gender and declension class (Trommelen & Zonneveld 1986; van Beurden 1987). Given that the Hungarian verbal compounds are headed by an element that has the property of not being capable

of bearing stress, it is plausible that the whole compound will inherit this property. This means that such compounds cannot occur in clause-initial position. There must be something in front of them, like a focused constituent. In the absence of a fronted operator, it is either a stranded ('climbed') PV or, if this is not available, the main verb that must shield an auxiliary from stress. But in case the PV and the main verb are part of the stress-allergic compound itself, rather than in front of it, nothing but a fronted operator can save the structure. (Note that the lowest verb must indeed form part of the compound, there are no 'roll up' structures from the middle of the verbal cluster, see Koopman & Szabolcsi 2000. This may follow from the fact that the lowest verb is the only lexical verb in the cluster, the rest are auxiliaries – plausibly compounding may not involve functional elements only.) Hence, verbal compounding is possible only in the presence of an operator.¹⁴

Interestingly, even when there is a fronted operator, the compound cannot involve all the verbs in the cluster, so an order as in (67) is impossible (see Bartos this volume).

(67) *FOCUS 4-3-2-1

Recall that operator movement must be accompanied by head movement of the finite verb. This means that in (67) the whole compound must have undergone this V-to-F movement. However, for reasons that are ill understood, complex verbs cannot undergo this type of movement in their entirety, only the verb heading them can. For example, in Dutch a distinction can be made between so-called separable and inseparable verbal compounds. The former strand their nonhead part when undergoing Verb Second, the latter take it along:

- (68) a. *Petra rijdt met veel plezier paard.*
 Petra rides with much pleasure horse
 'Petra has much pleasure in horseriding.'
 a'. **Petra paardrijdt met veel plezier.*
 Petra horse-rides with much pleasure
 b. *Piet slaapwandelde de hele nacht.*
 Piet sleep-walked the whole night
 'Piet was sleepwalking the whole night long.'
 b'. **Piet wandelde de hele nacht slaap.*
 Piet walked the whole night sleep

As argued in Ackema (1999b), it can be shown on independent grounds that the difference between these two types is precisely that the former are complex, whereas the latter are not (synchronically speaking). If there is indeed a ban on complex verbs undergoing substitution into a higher functional head, (67) is ruled out. Instead, verb 1 must undergo this movement alone, either by excorporating

from the compound, or by not taking part in the compounding process in the first place (the latter assumption is argued for by Bartos this volume). Either way, the resulting order is (69).

(69) FOCUS 1 ... 4-3-2

6. Conclusion

As argued in the introduction, if the syntactic behaviour of preverbs in Hungarian and Dutch is to be unified, it is rather awkward to have to assume that there is PV movement in neutral sentences (sentences without a focus or other operator) in Hungarian. In Dutch, nonfocused PVs arguably do not move at all. (Focused PVs clearly can move, in both Dutch and Hungarian.) An OV plus VR analysis for the Hungarian verbal cluster avoids having to postulate such PV movement, which makes such an analysis conceptually attractive. In this paper I hope to have shown that it is empirically tenable as well, as the data concerning the Hungarian verb cluster can be made to follow from it without having to jump through noticeably more hoops than in a VO alternative.¹⁵

Notes

* Thanks to Henk van Riemsdijk for the detailed comments he provided on an earlier version of this paper at one of the workshops on Hungarian vs. Germanic verb clusters. For useful suggestions and comments I am also indebted to the other participants of these workshops, in particular Katalin É. Kiss, Kriszta Szendrői and Ildikó Tóth, as well as to Daniel Margocsy, László Molnárfi, Fred Weerman, and the audience at a colloquium at the University of Tübingen.

1. This holds more generally for those languages in which more material of the VP of the main verb can appear inside the cluster (see below). Van Riemsdijk (2002) shows that an apparent class of counterexamples from Swiss German is, indeed, only apparent.

2. Müller (2001) proposes a constraint 'Parallel Movement' which states that c-command relations between two arguments must be preserved from one level of representation to the next (and see also Williams 2003 for a model of grammar from which this follows). He specifically notes that such a condition only holds of arguments, moreover, only in case they undergo the same type of movement (this accounts for order preservation between *wh*-constituents in multiple *wh*-movement, or between DP arguments in multiple scrambling). Thus, such a constraint does not apply to the case at hand (which involves preverb movement and remnant VP movement).

3. From the claim that verb clusters as well as the parts of a complex verb have basic OV order in Hungarian it does not follow that the basic order between the verb and its syntactic objects should also be obligatorily OV (which would probably be incorrect for modern Hungarian, see Dezső 1982 for discussion). In languages with a rich morphological case system, like Hungarian, object positioning does not depend on the setting of the OV/VO parameter, for reasons discussed in Neeleman and Weerman (1999). In fact, something similar can be observed in Dutch: PP-complements, not dependent on the verb for Case, can optionally appear to its right, also when the selecting verb is part of a cluster:

- (i) *dat zij zou kunnen hebben gedacht aan de vakantie*
 that she might can have thought about the holiday
 'that she might have been thinking about the holiday'

Certain word order facts indicate that such dependents are base-generated to the right of the cluster, not moved there (see for example Ackema & Neeleman 2002 for an account). This implies that their thematic relation with the selecting verb is not established in a VP headed by this verb only, e.g. not in the VP indicated in (13), but in a larger projection headed by the entire complex predicate. I leave open here how this is to be implemented technically.

4. In Section 2.6 an exception is discussed.

5. Henk van Riemsdijk (personal communication) notes that clitic climbing, as it occurs in Italian for instance, is also subject to the constraint that it only occurs in restructuring contexts. Interestingly, Cinque (2000) argues that in this case as well the 'climbing' of the clitic is only apparent (see also Miller & Sag 1997; Monachesi 1999, and others). According to him all restructuring cases involve a monoclausal, rather than a biclausal, structure, with the finite verb occurring in a higher head position of the extended projection of the main verb (see also Wurmbrand 2001; den Dikken this volume). Cinque further argues that the clitic can then in principle occur on either verb (this is subject to dialectal variation), without leftward climbing being involved.

6. The difference between VR and extraposition corresponds to a difference in the form of the matrix verb in case this is itself complement to a higher perfect auxiliary: it occurs in the expected perfect participle form when its complement undergoes extraposition (see *geleerd* 'learned' in (17b)), but as an infinitive when there is VR (see *leren* 'learn' in (17a)) ('Infinitivus Pro Participio', see for instance Abraham 1996 and references cited there).

7. As noted, the preverb can also be taken along under VR in Dutch, meaning that the order *Siegfried zal de draak weer moeten afslachten* in which the PV does appear adjacent to its selecting verb is also possible.

8. This presupposes F-movement to the matrix V precedes VR. This follows if VR is really a process of reanalysis of the syntactic tree, see Section 4.

9. At this point it is useful to consider the main argument Koopman and Szabolcsi (1998, 2000) give against a head movement analysis for PVC (as opposed to a remnant XP-movement analysis). This is that full XPs can partake in PVC. In (i), for example, a full PP partakes in the process.

- (i) *A szobában fogok akarni maradni.*
 the room-in will-1SG want-INF stay-INF
 'I will want to stay in the room.'

If PVC is an instance of movement, this would indeed indicate that it must be XP-movement. However, in the OV plus VR perspective the PV is not moved, but stranded. Of course, other elements belonging to the lowest VP may be stranded to the left of the raised verb just as well as a PV. Given that none of these elements is supposed to move in the proposed analysis, no distinction between X^0 s and XPs is expected in the first place.

10. Note that reanalysis is not intended as an addition to the theory but should replace the option of having head-to-head adjunction altogether. (As has been noted frequently, head-to-head adjunction has some unexpected properties if it involves movement; for example, it does not comply with the c-command demand between antecedent and trace. This has led to proposals recasting head movement as XP-movement of phrases that are emptied of all material besides the head (e.g. Koopman & Szabolcsi 2000). However, another conclusion that can be drawn is that the formation of this type of complex syntactic heads does not involve movement at all – but rather reanalysis.)

11. For example, standard Dutch, Dutch dialects, older Dutch, its descendant Afrikaans, its neighbour German and *its* dialects all have different restrictions on the order within the verb cluster; see den Besten and Edmondson (1983), Haeseryn (1990), Wurmbrand (this volume), amongst others.

12. It is also crucial that nothing linearly intervenes between the verbal heads of the projections undergoing reanalysis, so this is only possible if the subject is postverbal (cf. (54)) (something that would not help in (52) obviously). This is crucial for the following reason. At first sight, (53) seems to contradict the assumption made in Section 2.2 that complex matrix verbs (matrix particle verbs) cannot trigger VR in Hungarian as well as in Dutch. If a projection containing matrix verb plus matrix subject can be reanalyzed with the embedded verb, why can't a projection containing matrix verb plus a preverb it selects do the same? There is a crucial difference, however: the preverb blocks linear adjacency between the verbal heads at the point at which reanalysis should apply, whereas a (postverbal) matrix subject does not (it only ends up inside the cluster after inversion has targeted a reanalyzed node):

- (i) ...V* [_{VP}* V [_{DP}]] (reanalysis possible)
 (ii) ... V* [_V* [_{PV}] V] (reanalysis impossible)

Apparently, reanalysis is conditioned by a purely linear adjacency condition. This makes sense if reanalysis is a process taking place at the PF interface (as actually suggested by Haegeman and van Riemsdijk). Ackema and Neeleman (2003) argue that all processes which require adjacency of two elements are PF processes subject to a condition that requires the two elements undergoing it to be in the same local prosodic domain, in particular the same prosodic phrase ϕ . For reanalysis to be possible the process must be able to detect the constituents that are to undergo it simultaneously. If it is indeed a PF process of the relevant type this means these constituents must be in the same ϕ . Now, the edges of ϕ s are determined by where the edges of syntactic maximal projections are. The relevant condition here

is that right edges of XPs are mapped to right edges of ϕ s (Selkirk 1986). The PV in (ii) then prevents both starred Vs from being in the same ϕ . Under the assumption that the PV is a maximal projection, which it arguably is when the particle verb is not morphologically derived, (Groos 1989; Ackema & Neeleman 2001), its right bracket induces ϕ -closure, thus excluding the V of the second V*. In contrast, V* and VP* in (i) do form one ϕ , since the ϕ domain is closed only after the right bracket of the DP. Note that inversion, which as noted can result in linear orders with XPs inside the cluster, does not interfere with ϕ formation – by its very nature it is a post-reanalysis process, hence also a process taking place after mapping to PF.

13. Note that these constraints are intended just to be descriptive. It seems to me that this unavoidable, however, given that the order in verb clusters appears to show completely arbitrary variation cross-linguistically; see Wurmbrand (this volume).

14. One might ask why a preverb belonging to a higher verb in the cluster that does not form part of the compound cannot save this compound from stress in the absence of a fronted operator. In other words, why is it impossible to have PV-[4-3]-1-2 with the PV belonging to 2? The answer is that, if the PV is selected by 2, the base order of this structure must have been [4-3]-PV-2-1, with consequent VR of 2 to 1 – but then the PV cannot end up in front of the 4-3 compound without raising (to the left) on its own, which is hypothesised to be impossible here. (Recall that PVC is PV stranding in the position from which VR of the verb selecting the PV took place; VR did not take place from in front of the compound in the structure mentioned).

15. As a final test annex short recapitulation, let us consider how the OV + VR approach does on “the core facts that a theory of inversion needs to account for” (Koopman & Szabolcsi 1998: 14) (note that the following statements are made from a VO perspective): (i) *A preverb fails to invert: *V_{inf} PV*. This is because a PV cannot postpose on its own, it can only possibly be taken along under VR by its selecting verb; this was the point of the analysis, see Section 1. (ii) *A preverb inverts with a verb that is not its governing verb*. From the present perspective this means that the PV must either be taken along under VR of its selecting verb or be stranded in the base position of this verb; it cannot be stranded somewhere in the middle of the cluster. As noted in Section 4, such orders can only be derived by noncyclic applications of VR, but in Dutch this does not render them unacceptable, at least for a significant number of speakers (compare Section 1; see also Evers 2003 for a new account of such orders from a VR perspective). A closer look at Hungarian in this respect seems desirable. (iii) *A segment with an internal English order inverts*. In terms of the above this means that a segment with an internal inverted order does not invert with the next highest verb. This means inversion must be all the way up in Hungarian, as established in (57a). This is of course a stipulation, but such a stipulation is necessary in any theory, since the relevant order is not impossible in principle; it occurs in for instance Afrikaans: *dat ek hulle die lied* [[hoor sing] het] ‘that I them the song hear sing have’ (iv) *A verb inverts without taking its preverb along*. In terms of the above, it cannot be that a verb does not invert but its preverb does. Thus, this is excluded for the same reason as (i): a preverb cannot raise on its own.

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Verbal complexes and morphosyntactic merger^{*}

Huba Bartos

1. Introduction

In this paper I will examine the so-called *inverted* (or: “roll-up”) structure of serially embedded infinitives in Hungarian, illustrated in (1), in the context of a model of *on-line* morphology, which has been designed to give a complete, detailed account of Hungarian inflectional morphosyntax (Bartos 1999).

- (1) a. *Most fogok [akarni [kezdeni [énekelni]]].* – straight order
now will-1SG want-INF begin-INF sing-INF
‘Now will I want to begin to sing.’
b. *Most fogok [énekelni kezdeni akarni].* – inverted order
now will-1SG sing-INF begin-INF want-INF
‘= (1a)’

In the first part of the paper I give the details of the morphosyntactic model with some demonstration of how it treats certain scope effects related to verbal inflection in Hungarian, and in the second part I show how this model can cater for the “roll-up” phenomenon (first observed by Kenesei 1989), and explain its major properties. Essentially, I argue that the inverted structure is morphological in nature, i.e. it is created by the same morphosyntactic operation which is responsible for inflectional affixation.

Stacked infinitives have been in the focus of much recent syntactic research on Hungarian: as a reaction to Koopman and Szabolcsi’s (2000) analysis of the inverted order in terms of (remnant) XP-movement, both Brody (1997), and É. Kiss (1999) put forth alternative analyses in terms of head-chain type relations. My approach is clearly in line with the latter perspective, but argues against the XP-movement analysis partly on different grounds than Brody and É. Kiss did.

2. Inflectional affixation in Hungarian

In this section we will examine in detail an interesting part of the Hungarian verbal inflectional system. This will follow the discussion in Bartos (2000b), where the full paradigm of inflectional affixation is analyzed. In this language, there are three interpretable inflectional categories¹ of V expressed by morphological means: mood (M), tense (T), and modality (Mod), which, in our crucial examples, will be represented by the values ‘conditional’, ‘past’, and ‘potential’, respectively.

2.1 Scope effects

Certain combinations of the relevant inflectional categories have two scopally different readings, while others are not ambiguous.² Specifically, tense and modality, and tense and mood can stand in either scope order ($T > \text{Mod}$, $\text{Mod} > T$, and $T > M$, $M > T$), but this variance is not matched by any sort of difference or variability in either syntax or morphology: the very same structure represents both scope readings, as shown in (2):

- (2) a. *Vár-t-am vol-na.*
 wait-PAST-1SG expl-COND
 ‘I would have waited.’ ($M > T$) or ‘I wished to wait.’ ($T > M$)³
- b. *Vár-hat-t-ak.*
 wait-POT-PAST-3PL
 ‘They could/were allowed to wait.’ ($T > \text{Mod}$) or
 ‘They may (possibly) have waited.’ ($\text{Mod} > T$)

On the other hand, the combination of mood and modality displays no scope ambiguity, and neither does the simultaneous occurrence of all three categories in the same V-complex: (3).

- (3) a. *Vár-hat-ná-nak.*
 wait-POT-COND-3PL
 ‘They could wait.’ ($M > \text{Mod}$), but: *‘They possibly wish to wait.’
 (* $\text{Mod} > M$)
- b. *Vár-hat-t-ak vol-na.*
 wait-POT-PAST-3PL expl-COND
 ‘They could have waited.’ ($M > T > \text{Mod}$), but: *any other scope order

It is a standard assumption that scope is represented in the syntactic structure by the structural relation of c-command (May 1985; Aoun & Li 1993), as given in (4), abstracting away from possible complications caused by multiple chain links, not important here:

(4) SYNTACTIC REPRESENTATION OF SCOPE

Scope is represented in syntax by c-command: x is in the scope of y iff y c-commands x .

We expect then, that the different scope orders in (2) are paired with different c-command relations in the syntactic structures: in one case T c-commands M, and in the other, the c-command relation is reversed (or: T and M c-command each other in a single structure – an unlikely state of affairs in the case of heads, even when they are adjoined to each other, especially if Kayne's (1994) LCA-system is assumed). This, however, leads to a conflict with a generalization enjoying wide currency in recent literature: the Mirror Principle of Baker (1985):

(5) THE MIRROR PRINCIPLE

Morphological derivations mirror syntactic derivations, and vice versa.

Such mirroring effects have been found so pervasive cross-linguistically, that a universal hierarchy of functional projections (frequently headed by affixal elements) has been proposed by Cinque (1999), partly built on the Mirror Principle, while e.g. Brody (1997) devised a syntactic model in which the morphology-syntax mirror is an axiom. Furthermore, Bartos (1999) has shown that the inflectional morphology of Hungarian can be analyzed as obeying the Mirror Principle as a whole. It is quite reasonable then for us to try to stick to this "principle" as a valid generalization.

The problem is that the different scope orders of (2), assigned to different c-command configurations by (4), belong to invariant morphological structures, whereas, in the spirit of the Mirror Principle, one would expect that variant configurations between morphologically affixal heads belonging to the same extended projection (and the same word-domain, as affixes) are mirrored by non-identical morpheme orders. If, for example, M c-commands T in syntax, and the V-stem picks up affixes in an order that is the inverse of the c-command order of the respective syntactic heads (also cf. Chomsky's 1995 explication on the Mirror Principle), then the morpheme order "V+T+M" should arise (since T and M are suffixes in Hungarian, as shown above).⁴ If, however, T c-commands M, e.g. to obtain the T > M reading, then a "V+M+T" morpheme order is expected – contrary to fact. The same applies to the combination of T and Mod. Thus it seems that we must abandon either the Mirror Principle (supporting, and supported by, the universal functional hierarchy of Cinque 1999), or the even more standard syntactic scope representation – or we have to find an account that manages to observe (4), and maintain the spirit of (5), while explaining the occurrence of scope variance in (2). We choose the last option, and provide a derivational analysis to this end. In order to avoid morphophonological complications (see Note 4), we will focus on (2b), the case involving T and Mod, following the analysis of Bartos (1999), improving upon the one in Bartos (2000b).⁵

2.2 On-line morphology: One word form, two syntactic structures

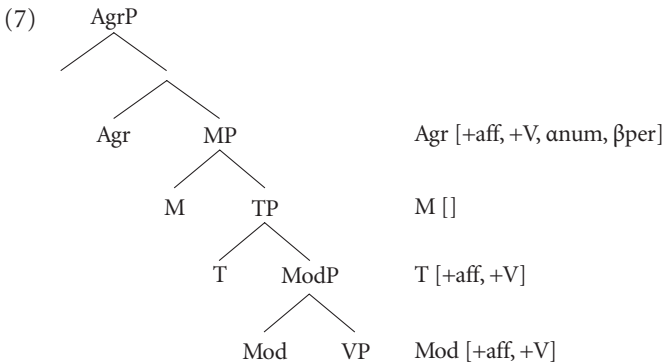
One possibility that arises immediately is to resort to covert movement: semantics, where scope is interpreted, is fed by LF, while morphology is fed by the spell-out representation, so in principle, the syntactic structure may be rearranged between spell-out and LF in such a way that a single overt derivation forks after spell-out, and leads to two divergent LFs, with the two different c-command orders required for the correct scope orders. This, however, is not a favorable option, for theoretical reasons. For one thing, in standard minimalist theories (e.g. Chomsky 1995), covert movement is pure feature movement, i.e. the movement of the formal feature content of head-level categories, which targets other head-level categories as adjunction sites. The emerging adjunction configuration, however, is not unanimously recognized as one in which the adjoined feature-bunch c-commands anything the adjunction host does.⁶ For another, Kayne (1998) argues against (i) the existence of covert feature movement, and (ii) covert movement altering scope relations, primarily on empirical grounds. Therefore I strive to create a model that emulates the effects of covert movement without covert movement *per se* – the operations I will propose below are overt in the sense that they occur in the same derivational cycle as all visible/audible rearrangement operations, and the reason why some rearrangements remain invisible/inaudible (or more precisely: occur in a phonological “blind spot”) is purely morphological.⁷

In our model, presented and explained in full detail in Bartos (1999), syntax is derivational and strictly cyclical, and morphology runs on-line with syntax: each step in the syntactic derivation is scanned and followed by a step in morphology, as long as morphology is concerned in that derivational step.⁸ In our specific case, analyzing the assembly of roots and their affixes, whenever two syntactic heads become associated in such a way that, as a result, they will fall into one word domain, that word domain is immediately created by morphology. So if in step *n* of syntax a stem-type category *X* and an affixal head *Y* are paired in a morphologically relevant way (e.g. by head-adjunction), then before step *n* + 1 takes effect in syntax, morphology executes all necessary operations leading to, and following from, placing the morphological exponents of *X* and *Y* into one word domain.⁹ Furthermore, I assume, following Halle and Marantz (1993), and Marantz (1997), that the insertion of vocabulary items (morphs) takes place after syntax, in morphology, while syntax operates on semantico-syntactic feature bundles as morphemes.

In addition to head-adjunction, there is another, less costly, way of associating stems and affixes: *morphosyntactic merger*, as defined in (6) – a notion akin to Halle and Marantz’s (1993) *morphological merger* operation, but differing from it in that this one, as its name suggests, takes place in syntax proper, having syntactic consequences, as well as morphological ones.

- (6) a. MORPHOSYNTACTIC MERGER (M-MERGER)
 A [+affix] category *X* can morphosyntactically merge with a potential stem *Y* under *structural adjacency*. This yields a word domain {*x*; *y*} (where *x* realizes *X*, and *y* realizes *Y*) at the level of morphology, and a head-chain <*X*,*Y*> in syntax.
- b. STRUCTURAL ADJACENCY (cf. also Frampton & Gutmann 1998, 1999)
X and *Y* are structurally adjacent iff
- (i) *X* c-commands *Y*, and
 - (ii) there is no *Z*, such that *Z* is of the same projection level as *X*, and *X* c-commands *Z*, and *Z* c-commands *Y*

Suppose now, for the concrete case of *V* picking up (past) tense and (potential) modality, as in (2b), that the projectional hierarchy is AgrP > MP > TP > ModP > VP. Agr is placed outermost, to directly match the outermost location of Agr-affixes on all V-forms, and the order assumed for the three interpretable inflectional categories, M, T and Mod, is the one matching the order of affixes, too, and complying with the sole available scope order for the cases with all three categories marked, as well, cf. (3b). (7) provides the pictorial illustration:



The structure is built cyclically, bottom up, so first the VP is built, then it is merged with Mod. The insertion of Mod is followed by the M-merger of *V* and Mod, triggered by the affixal nature of Mod. (Technically, this is looked upon as a case of feature satisfaction.) M-merger thus creates a <Mod, *V*> chain for syntax, and a word domain {Mod; *V*} for morphology. Linear order plays no role either in syntax (Kayne 1994), or in the word domain output of M-merger, which is a syntactic operation after all. In morphology, the linear order of Mod and *V* will be fixed after vocabulary insertion (occurring concomitantly with the word domain formation), and it will be determined by the (phonologically rooted) inherent properties of the actual items: affixes are inherently categorized as prefixes or suffixes. In Hungarian,

all verbal inflectional affixes are suffixes, so the arising word form will be linearly fixed as $[_{\text{word}} \text{V-Mod}]$.

The next syntactic step introduces T into the structure, which is again followed by the M-merger of the $[\text{V+Mod}]$ unit and T, yielding $\langle \text{T}, [\text{Mod}, \text{V}] \rangle$ (or $\langle \text{T}, \text{Mod}, \text{V} \rangle$ – the choice is immaterial here) as a chain, and $\{\text{T}; \{\text{Mod}; \text{V}\}\}$ as a word domain. What is important on the morphology side is that T enters the word domain in a later phase than Mod and V, so the narrower domain consisting of just Mod and V appears as one unit in its relation with T – this effect is due to the extended notion of *strict cyclicity*,¹⁰ traditionally known from lexical phonology/morphology, and often attributed to the procedure of *bracket erasure*: once V and Mod are united by morphology, the internal structure of the $[\text{V-Mod}]$ morphological complex becomes invisible and inaccessible to further operations, such as the affixation of T, for instance. This yields the fact that the tense-affix cannot be placed in between V and Mod, but only to the periphery of the $\{\text{Mod}; \text{V}\}$ domain – the particular choice between the two edges depends on the nature of the tense-affix again, which, being suffixal, attaches to the right-edge of $[\text{V-Mod}]$, resulting in the $[_{\text{word}} \text{V-Mod-T}]$ morph sequence.

Now we have an option whether to insert M, or not. Since M does not have a marked value in the example under investigation, the simplest way is to proceed directly to inserting Agr, which will then be M-merged with the V-complex in the usual fashion. As regards scope: T clearly and asymmetrically c-commands Mod, so the direct $\text{T} > \text{Mod}$ scope relation is achieved. Alternatively, however, we may choose to insert M, which is a mere feature frame, without any feature content. It is therefore rather like an empty templatic slot (made available by the interpretable inflectional template of Hungarian which obviously consists of three places: one for Mod, one for T, and one for M), waiting to be filled in with real content. So this empty “M” acts something like a *proxy*, or place-holder. Assuming (in the absence of evidence to the contrary) that it can only be filled in by some other category of the same template, we may choose to raise either T or Mod to the proxy “M”. If we raise T, the output will not differ in any significant way from the output of the derivation without inserting “M”, and this fact renders T-raising a redundant option, to be avoided for general reasons of economy. On the other hand, if we raise Mod, something significant happens.¹¹ Since M is a mere slot in the structure, Mod-raising will be a case of substitution rather than adjunction, i.e. Mod will occupy the place of M in the structure, thereby getting into a position from where it will now c-command T. And this is how the inverse scope order ($\text{Mod} > \text{T}$) emerges.

On the side of morphology, however, no rearrangement takes place. The insertion of the empty “M” has no visible morphological consequence: it is M-merged into the word domain built around V. The raising of Mod should be reflected by morphology – were it possible. But Mod’s exponent in the morphological struc-

ture is buried too deep already: it entered a word domain with V in an earlier cycle, even followed by the adding of the tense affix, so by the time Mod raises in syntax, its corresponding affix is frozen in its original place, adjacent to the V-root. The strict cyclicity property of morphology precludes the “mirroring” of the syntactic derivation at this point. The Mirror Principle is thus observed by the step-by-step application of morphological operations in the wake of the syntactic operations as long as the internal rules of morphology are capable to execute the mirroring step. Once a step should run counter to the tenets of the morphological module, it cannot be done. Mirroring thus fails, but only in such cases. So the rearranged syntactic structure, with Mod over T, is paired with a morphological structure non-distinct from the previous one, without (or prior to) Mod-raising.

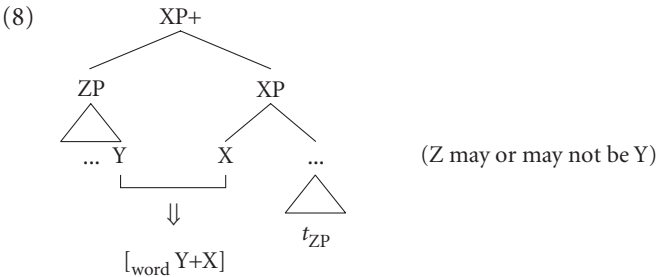
Note that the Agr-category does not take part in these complications: it is not part of the same templatic capsule as the other inflectional categories, and, moreover, it is never contentless – agreement specifications are always present in any structure.

The scope variant case of M and T is considerably more complicated, both on the morphology side (with the insertion of an expletive V-root to carry the mood affix, as an instance of morphologically induced repair), and on the semantic side (scope inversion does not follow the above scheme – instead, it has to do with the modal interpretation of the mood-marker, in which case it has narrow scope with respect to T, which is related to the Mod head) – the reader is referred to Bartos (1999, 2000b) for the details. As regards the invariant cases (M and Mod in (3a), M, T, and Mod in (3b)), they simply fall out in our model. Mod cannot scope over M, since there is no potential proxy above M (recall that Agr is not part of this game), and if T occurs as a proxy, raising Mod to T does not change c-command relations between M and Mod, so it is redundant. Likewise, when all three interpretable inflectional categories are marked, i.e. contentful, there is no space for any sort of rearrangement in syntax among them, hence the complete lack of variation. Nothing would be a more straightforward consequence of our analysis than this state of affairs, with a single available scope order, and this lends significant support to our model, while immediately casting doubt on any more powerful covert movement-based or semantic account.

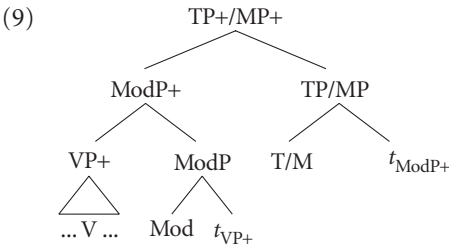
3. The failure of phrasal movement analyses

Koopman and Szabolcsi (2000: Ch. 4.) propose to analyse affixation syntactically, in terms of phrasal movement. They assume that affixation occurs if the stem and its affix become linearly adjacent in a syntactic structure, for example when an XP containing the stem as its rightmost element raises to the specifier position of a

suffixal head – or more precisely, to the specifier of the projection immediately dominating the maximal projection of the affixal head:



Koopman and Szabolcsi’s model as a theory of inflectional affixation is, however, unsatisfactory. It is incapable, for instance, of capturing the scope variation examined and analyzed above. In particular: it can only derive a given morpheme order in one way, i.e. by only a single syntactic representation, which cannot encode divergent scope relations between the same elements. Recall that to the [V+Mod+T] sequence two different scope relations can be assigned: Mod > T and T > Mod, whereas for the [V+Mod+M] sequence there exists only one: M > Mod. In case we want to attribute the scope effects to ambiguous or different c-command relations in the former case, and to an unambiguous c-command relation in the latter, we get into trouble. For the two relevant morpheme sequences to arise, Koopman and Szabolcsi must arrive at the following representation in their system:



That is, ModP+ must have been raised to a specifier immediately adjacent to TP or MP. But whatever way we choose to define scope-taking or c-command, we ought to get variable scope order either in both cases, or in neither one. If the head-level categories Mod and T (or M) are supposed to c-command their scopes, then only the T > Mod (or M > Mod) order is warranted, since T/M c-commands the trace/lower copy of Mod(P). If, on the other hand, the scope domain of Mod were defined as the c-command domain of its maximal projection, ModP+, then only Mod would c-command, hence scope over, T/M, and not vice versa – contrary to

fact. Finally, if we allow both definitions of scope-taking, then Mod and M should mutually scope over each other, just like Mod and T, again an unwelcome result.

Furthermore, Koopman and Szabolcsi's solution suffers from yet another potential problem: in (9), it is only Mod(P) that is supposed to c-command and scope over T/M, but not ModP+, because the latter also contains V, but V definitely does not have wide scope over T/M (M. Brody, p.c.), so it becomes even more hopeless to devise an adequate formulation of scope in terms of c-command for these Hungarian cases. The conclusion is, then, that head-chain type relations cannot be wholly dispensed with – at least some aspects of inflectional affixation call for a head-chain analysis, because the XP-movement analyses fall short of capturing the totality of facts involved. But once head-type relations must be allowed into the theory, they become available for the analysis of other phenomena to which Koopman and Szabolcsi assign phrasal movement treatments. The next section of this paper will examine one such empirical domain.

4. Extending M-merger to “roll-up” V-clusters in Hungarian

Now we turn to the data given in (1), repeated here, and examine whether and how our morphosyntax model can be used for analysing them. This analysis will be akin to those by Brody (1997) and É. Kiss (1999), insofar as the inversion (or “roll up”) will be considered to emerge from a head-chain relation, rather than from a succession of remnant VP-movements advocated by Koopman and Szabolcsi.

- (1) a. *Most fogok [akarni [kezdeni [énekelni]]].* – straight order
 now will-1SG want-INF begin-INF sing-INF
 ‘Now will I want to begin to sing.’
 b. *Most fogok [énekelni kezdeni akarni].* – inverted order
 now will-1SG sing-INF begin-INF want-INF
 ‘= (1a)’

Let us assume that, instead of a movement-type chain, the inverted structure like (1b) involves a chain created by M-merger – i.e. the most deeply embedded V (*énekel*) does not move and adjoin to ever higher V^0 s, picking them up one by one, but gets associated with them by M-merger. This results in a chain $\langle V_1, V_2, \dots V_n \rangle$, where V_n is the most embedded (in some accounts: most fully thematic) verb, and also in a large word domain including all the verbs:¹² $[_{\text{word}} V_n + V_{n-1} + \dots + V_1]$, corresponding to *énekelni* \sim *kezdeni* \sim *akarni* in the particular case of (1b). For this to work, we must assume that the higher verbs bear an (optional) [+suffix] feature, so that they wish to be picked up by a “stem”, i.e. the lowest V. Being an affix in some abstract sense may be related to the somewhat defective nature of the

higher, auxiliary-like verbs, as far as their thematic properties are concerned. The properties and effects of M-merger in fact yield most characteristic features of the inverted structure, discussed by Koopman and Szabolcsi, Brody, and É. Kiss.

1. In the roll-up sequence, only the left edge can bear stress (except, maybe, very strong contrastive stress used in the case of corrections – the type that can even affect “real” suffixes, e.g. *Nem a ház-”BÓL, hanem a ház-”BA*. ‘Not the house-FROM, but the house-INTO.’; but not focal stress, for instance). This is a natural consequence of the whole sequence being one word domain, hence one prosodic domain. Also, the natural way to pronounce roll-up V-sequences is to utter the whole string without any pause between the verbs, unlike in the straight order, where pauses are possible anywhere.
2. As the roll-up cluster forms one morphological word, no other element can intervene between the Vs in the cluster (10b, 11b), unlike in the case of straight order (10a, 11a):

- (10) a. *Most fogok akarni el- kezdeni énekelni.*
 now will-1SG want-INF PV begin-INF sing-INF
 ‘Now will I want to begin to sing.’
 b. **Most fogok [énekelni el-kezdeni akarni].*
- (11) a. *Anita fogja akarni holnap kezdeni szét-
 Anita will-3SG-DEF want-INF tomorrow begin-INF apart-
 szedni a rádiót.*
 take-INF the radio-ACC
 ‘Anita will want to begin tomorrow to take the radio apart.’
 b. **Anita fogja [szétszedni holnap kezdeni akarni] a rádiót.*

3. The roll-up V-sequences (but not the straight sequences) can serve as input for certain derivational operations, i.e. they behave as word-level units, as predicted by the M-merger analysis:

- (12) a. [*énekelni ~ kezdeni ~ akar*] -*ás*
 sing-INF begin-INF want -NOMINALIZER
 ‘desire_N to want to begin to sing’
 b. (az) [*énekelni ~ kezdeni ~ akar*] -*ó* (fiú)
 the sing-INF begin-INF want -PARTICIPLE boy
 ‘(the boy) wanting to begin to sing’
 c. **akar-ás/-ó kezdeni énekelni*

4. The M-merger analysis also accounts for the fact that the rolling up cannot skip any of the Vs, targeting a higher one: M-merger, as defined in (6), picks up heads one by one in a strictly local fashion (cf. the strict locality of “head movement” in movement analyses of affixation). This is why *énekelni kezdeni akarni* in (1b) can only mean ‘to want to begin to sing’, and not e.g. ‘to begin to want to sing’, as observed by Brody (1997). He uses this local nature of rolling up the Vs as a strong argument against Koopman and Szabolcsi’s phrasal movement account, which would have to stipulate this degree of strict locality, as XP-movement can legitimately skip certain positions, as long as it observes relativized minimality (Rizzi 1990; Chomsky 1995).
5. The rolling up can stop anywhere, need not go way up to the highest V. This follows from the arbitrary assignment of the [+suffix] feature to the non-lowest Vs: if there is one among them that is not assigned this feature, it blocks the continuation of M-merger – a non-affix will not participate in chain and word-domain formation. Of course, if there is a V in the series of embeddings which blocks the extension of M-merger in this way, and there is (at least) one V higher up in the structure which has this feature, the derivation will crash, because there is no legitimate way to satisfy the affix-feature of this higher V.¹³
6. There is a further interesting property of roll-up: it has to stop before the highest V if it is tensed, i.e. the topmost tensed V cannot become part of the extended word domain:

- (13) **Maci Laci [énekelni kezdeni akarni fog]*.
 Yogi Bear sing-INF begin-INF want-INF will-3SG
 ‘Yogi Bear will want to begin to sing.’

As É. Kiss (1999) noted, this constraint is not about *any* topmost V, but only about tensed Vs – if the topmost V is an infinitive, too, then roll-up can reach all the way up:

- (14) [*Énekelni kezdeni akarni*] *nem okos dolog*.
 sing-INF begin-INF want-INF not clever thing
 ‘It is not a clever thing to want to begin to sing.’

Both Brody (1997) and É. Kiss (1999) attribute this property to a constraint on the *fog* ‘will’ type verbs, which occur in the position under investigation, do not tolerate a phonologically too “heavy”, or too complex (branching) verbal modifier. This, of course, is a possible (though essentially stipulative) explanation, nevertheless it is worth examining other possibilities, as well. Consider the paradigm in (15),¹⁴ where the Brody–É. Kiss explanation is unavailable: *akar* ‘want’ is not a *fog*-type verb, witness (14), in which *akar* does take a big verbal modifier, *énekelni kezdeni* ‘to begin to sing’.

- (15) a. *Nem kell akarnod kezdeni lebontani a sátrat.*
not must want-INF-2SG begin-INF down-pull-INF the tent-ACC
'You don't have to want to begin to pull down the tent.'
– straight order
b. *Nem kell akarnod [lebontani kezdeni] a sátrat.* – partial roll-up
c. **Nem kell [lebontani kezdeni akarnod] a sátrat.* – total roll-up

Nor is the topmost V tensed in (15c). What (13) and (15) suggest, however, is that in the roll-up structures there is some notion of *uniformity* at play. A roll-up sequence is legitimate only if all of its members are uniform in the degree of finiteness. In (13) this means that they all have to be either tensed or untensed. The former option, i.e. a roll-up sequence with uniform tensed Vs cannot exist, independently, because the complements of the “roll-up” verbs (“light verbs”, “semi-auxiliaries”) must be infinitival, i.e. the straight order underlying the inverted one does not exist, either. In (15), uniformity refers to agreement marking, which is also a subcase of finiteness (recall that Tense and Agr used to be lumped together in GB-theory under the label ‘Infl’), and which is a possible property of infinitives in Hungarian. In (15b), in the partial roll-up, both members are unmarked for agreement, but once roll-up tries to incorporate the topmost, inflected infinitival, as in (15c), ill-formedness is the result. As opposed to the bad cases, (14) is ruled in, because all the verbs, including the topmost one, are uniform: untensed and uninflected for person/number. This uniformity requirement can apply to the chain created by M-merger, so if the output chain does not meet this requirement then the resulting roll-up structure will be ungrammatical, no matter how well-formed the morphological output is. This is a more principled explanation of the phenomenon than the ones proposed by Brody and É. Kiss. Furthermore, their analyses cannot even make use of the uniformity constraint, because for them, the roll-up complexes are assembled by successive cyclic incorporation, whereby the verbs themselves will not be links of the same chain (instead, they will form two-member chains embedded in one another, as is usual with adjunctive head-movements series).

A potential objection to my approach might be to note that (16) is acceptable as a roll-up structure, although the verbs are not uniform in finiteness: *akar* ‘want’ is tensed, while the others are not.

- (16) *Maci Laci énekelni kezdeni akar.*
 Yogi Bear sing-INF begin-INF want-3SG
 'Yogi Bear wants to begin to sing.'

But (16) only resembles true roll-ups at first sight. On closer scrutiny, it turns out that the (roll-up) unit *énekelni kezdeni* is in focus, i.e. it is not in one complex with *akar*; and such focusing is presumably derived by phrasal movement, anyway

(Brody 1997). The word order in (16), on the other hand, is ill-formed as a neutral sentence, unlike the one in (14), for example, which observes uniformity, indeed. The only real threat to the uniformity approach is data like (12a, b): there we see true non-uniform roll-ups as the inputs of derivation. But we may claim that here the derivational affixes are what render the topmost V, *akar* ‘want’, equally non-finite, as the infinitives are.¹⁵

Also, there are cases with only two verbs connected, which seem to defy uniformity:

- (17) a. [*úszni akar*]
 swim-INF want-3SG
 ‘wants to swim’
 b. [*olvasni fog*]
 read-INF will-3SG
 ‘will read’

But these, I claim, are not roll-up structures, either. Instead, they are cases of real “incorporation”, satisfying the need of these finite Vs for a verbal modifier. In fact, this construction, involving more Vs, can produce orders which are neither straight, nor properly inverted – orders which are ill-formed if conceived of as roll-ups:

- (18) a. *Péter* [*úszni*]_x *akar* [(*meg-*) *tanulni* [*t_x*]].
 P. swim-INF want-3SG PV learn-INF
 ‘Peter wants to learn to swim.’
 b. *Péter nem akar tanulni úszni.* – straight order
 P. not want-3SG learn-INF swim-INF
 ‘Peter does not want to learn to swim.’
 c. *Péter nem akar [úszni tanulni].* – cf. (17)
 ‘= (18b)’
 d. *Péter* [_F *úszni tanulni*] *akar.* – focusing the (17)-type unit, cf. (16)
 ‘Peter wants to LEARN TO SWIM.’
 e. **Péter* [*úszni ~ tanulni ~ akar*]. – bad as neutral roll-up, cf. (13)

(18a) without the preverb *meg-* is either neutral, or focusing *úszni* ‘to swim’; with the preverb it has focus on *úszni*. These examples, especially (18a), suggest that in these constructions, including (17), the first V, *úszni* ‘swim’ (and *olvasni* ‘read’) moves to the front of the matrix V by phrasal movement, i.e. these Vs are not head-chain-related at all, that is why and how the fronted V can skip another one.

Note, incidentally, that Brody’s analysis of roll-up structures is similar in spirit to my one: he also takes the roll-up sequence to be some sort of extended word, insofar as he labels each item in the roll-up except the rightmost one as ‘prefix’. This

prefixal nature spreads on the verbs by inheritance: its source is the preverb-type verbal modifier, an inherently prefixal item, which initiates the roll-up in many cases, like *szét* ‘apart’ in (19):

- (19) a. *Anita szét_x fogja akarni kezdeni [t_x szedni] a rádiót.*
 Anita apart will-3SG want-INF begin-INF take-INF the radio-ACC
 – straight order
 ‘Anita will want to begin to take apart the radio.’
 b. *Anita fogja [szét-szedni~kezdeni~akarni] a rádiót.* – roll-up

The verbal modifier transmits its [+prefix] feature to the ever-growing roll-up sequence, so that each roll-up complex becomes a prefix on the next higher V: *szét* is a prefix of *szed*, *szét-szed* is a prefix of *kezd*, and *szétszedni~kezdeni* is a prefix of *akar*. This analysis, as opposed to the M-merger account, needs some additional mechanism, however, since roll-up need not be initiated by an inherently prefixal preverb – witness (1b) or (14), where there is no preverb at all, and the “initiator” of the roll-up is simply the lowermost V, the “root” of the extended word in my analysis. Brody’s [+prefix] feature, then, must be freely assignable to the lowest V.

The final point in this section concerns yet another property of roll-up sequences, not explained by my model (nor by É. Kiss’s (1999 one, for that matter, while Brody 1997 does not address this problem). The rolling-up cannot begin with any other V than the lowest one:¹⁶

- (20) **Nem fogok [kezdeni_x ~ akarni] t_x énekelni.*
 not will-1SG begin-INF want-INF sing-INF
 ‘I will not want to begin to sing.’

(The string in (20), with a non-inverted structure is good, but with a different interpretation: the one in which *kezd* ‘begin’ takes *akar* ‘want’ as its complement – ‘I will not begin to want to sing.’ This reading and structure are irrelevant for us.) The situation in (20) could arise in our model if, for example, *akarni*, but not *kezdeni*, had the optional [+suffix] feature assigned to it, thus triggering M-merger with the closest c-commanded V that is capable of “hosting” it, which is the immediately following V, rather than the lowest one. *Akarni*, on the other hand, is not affixal, so it will not M-merge with *énekelni* beforehand. In order to solve this problem, we have to stipulate either that the assignment of the [+suffix] feature to the infinitives must begin at the lowest possible V (the absolutely lowest V cannot be assigned this feature, because it could not find any hosting stem), or that the “light” (i.e. potentially suffixal) verbs cannot act as hosting roots themselves for anything larger than an inflectional affix (this property being an ingredient of “lightness”). While neither of these stipulations is very pleasing, they do not seem to be too high a price

for the gains of this analysis on the other aspects – especially in comparison with the lack, or cumbersome nature, of explanations for this last point in the competing models of É. Kiss, Brody, or Koopman and Szabolcsi.

5. Adverbs and roll-up clusters

This final section is devoted to yet another argument in favor of analyzing roll-up structures in terms of morphosyntactic merger, in comparison with V-raising analyses. It is interesting to examine where the adverbs associable with the different verbs of the clusters may appear, with respect to the rolled-up unit, since this may also shed some light on the precise syntactic nature of the roll-ups. Consider the straight-order sequence originally seen in (1a), compared with a partially inverted order, and with the fully inverted roll-up – the slots marked by the capitals are possible targets of adverb placement:

- (21) a. (A) *fogok* (B) *akarni* (C) *kezdeni* (D) *énekelni* (E)
 will-1SG want-INF begin-INF sing-INF
 ‘I will want to begin to sing’
- b. (A) *fogok* (B) *akarni* (C) [*énekelni kezdeni*] (E)
 will-1SG want-INF sing-INF begin-INF
 ‘I will want to begin to sing’
- c. (A) *fogok* (B) [*énekelni kezdeni akarni*] (E)
 will-1SG sing-INF begin-INF want-INF
 ‘I will want to begin to sing’

Recall that nothing can intervene between the roll-up members, so there are no possible adverb sites inside the clusters, given here between square brackets. We will use adverbs which are only associable with one of the verbs each, so as to preclude any confusion of what goes where.

- (i) *hangosan* ‘loudly’ – can only modify *énekel* ‘sing’, but not the other two verbs;
- (ii) *hirtelen* ‘suddenly’ – can only be construed with *kezd* ‘begin’;
- (iii) *nagyon* ‘very (much)’ – only goes with *akar* ‘want’.

The results of a quick survey of five speakers’ intuitions (three linguists and two non-linguists), are statistically summarized in Table 1.¹⁷

Judgments of native speakers have turned out to vary wildly, but the general picture emerging from them shows that the adverbs are basically more or less acceptable in any slot preceding the roll-up sequence, especially when they also precede the V they modify, but they are markedly worse in the clause/VP-final position. The general unacceptability of each adverb in the final position is due to the

Table 1.

		A	B	C	D	E
(21a)	(i)	✓	?	?	✓	*
	(ii)	?	?	✓	??	?*
	(iii)	✓	✓	??	?*	*
(21b)	(i)	✓	??	✓		??
	(ii)	✓	✓	✓		??
	(iii)	✓	✓	?		*
(21c)	(i)	?	?			*
	(ii)	✓	✓			??
	(iii)	✓	?			?*

fact that the regular base position of manner adverbs is one left-adjoined to the VP they belong to, from where they may possibly undergo leftward movement in some cases, but never rightward movement. The only way for them to show up to the right of their VPs is when (the lower segment of) the VP itself is leftward moved, but those are always marked, non-neutral constructions, not examined here. This is in contrast with the behavior of other adverbials, like place or time adverbials, which may freely occur anywhere, even to the right of the main V. Consider the example of *az operában* ‘in the opera’, for which any of the above adverb positions is available in any of the constructions, including the final ones.¹⁸

- (22) a. *Nem fogok {az operában} akarni {az operában} kezdeni*
not will-1SG the opera-in want-INF the opera-in begin-INF
{az operában} énekelni {az operában}
the opera-in sing-INF the opera-in
‘I will not want to begin to sing in the opera’
- b. *Nem fogok {az operában} [énekelni kezdeni akarni] {az*
not will-1SG the opera-in sing-INF begin-INF want-INF the
operában}.
opera-in
‘I will not want to begin to sing in the opera’

To recapitulate: while some of the judgments seem quite murky, and the overall pattern is somewhat diffuse, one important point nevertheless shines through the haze. Manner adverbs are disallowed in the final position, whereas they are mostly acceptable in the rightmost available slot preceding the verb modified by the given adverb in each construction.¹⁹ This holds for the roll-up clusters, too, insofar as they are regarded as a single syntactic unit. The data thus go to show that the roll-up clusters are pronounced in a low position, more specifically in the position of the lowest V, which proves, in turn, that the roll-up clusters are better analyzed as

morphosyntactically merged than rolled up by successive V-raising. In the former case, the clusters are expected to be pronounced in the position of the “stem”, i.e. the lowest, thematically richest V, hence no appropriate adverb position could be found to their right, on the assumption that the natural position of adverbs in Hungarian is at the left edge of some VP, and never at the right edge. Were the roll-ups assembled by V-raising, however, at least some of the manner adverbs could be “stranded” on the right of the roll-up cluster, in their base positions – something not attested in the acceptable examples. (A remnant VP-movement analysis would yield better results than V-raising, since the remnant movement could possibly carry the adverbs leftwards/upwards, too, but such an analysis has been ruled out on other grounds in the previous sections.) The placement pattern of the locative adverbial *az operában* ‘in the opera’ serves as a contrastive background: it can freely occur clause-finally, and this is not influenced at all by inversion.

Compare the data further with genuine VP/IP-movement, such as the focusing of the lowest infinitival VP/IP *énekelni* ‘to sing’:

- (23) [_F *Énekelni*]_x *fogok akarni kezdeni hangosan* *t_x*.
 sing-INF will-1SG want-INF begin-INF loudly
 ‘I will want to begin to “SING (not anything else) loudly.’

Clearly, the adverb *hangosan* ‘loudly’ is fine in the clause final position, which is as expected, if focusing is conceived of as the movement of the VP/IP headed by *énekel* ‘sing’, leaving behind the adverb presumably adjoined to the VP/IP from the outside.

The pattern of adverb placement thus provides further evidence for the analysis of roll-up in terms of morphosyntactic merger, and against one in terms of successive (overt) V-raising, as e.g. in Brody (1997) or É. Kiss (1999).

6. Conclusion

In this paper I have demonstrated how a model of *on-line* morphology (i.e. cyclic morphology running on-line with, and following up on, the syntactic derivation) can account for the relatively complex set of facts about verbal inflection in Hungarian, including scope variation. Then I went on to show how this model can be put to use in analyzing the so-called inverted-order (or “roll-up”) structure of Hungarian verbal complexes: I treated these V-sequences as instances of words (in an extended sense), assembled by morphological mechanisms known from “regular” affixational morphology. This analysis has been shown to be able to capture most properties of “roll-up” without any further augmentation – with the notable exception of the fact that roll-ups cannot begin with an intermediate V, for which

case a separate assumption is necessary. I have also shown that this analysis fares better on the whole of Hungarian morphology than pure phrasal movement accounts, and at the same time it is in many points superior to other head-chain analyses of roll-up.

Certainly, the next step to be taken is to examine if this model can account for the various properties of verbal complexes of Germanic, which also include inverted order structures – but this remains for further research.

Notes

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1. Agreement (person, number) on V is standardly taken as uninterpretable, and has been shown to stand clearly apart from the three interpretable inflectional categories treated here by Bartos (1999, 2000b).

2. Or at least not in scope – there are cases of ambiguity, not relevant here, which result from the various possible semantic interpretations of conditional mood, but involve no scope variation. See Bartos (1999) for details.

3. Less natural, but more precise paraphrases bearing out the contrast are e.g.: 'It WOULD (now) be the case that I DID wait (had anyone told me to do so).' And: 'It WAS the case that I WOULD (= wanted to) wait (but the others urged me not to).'

4. Disregard the fact that the mood-suffix is borne by an expletive V-stem, the reason for which is that the past tense suffix and the conditional mood suffix cannot be adjacent to each other in the morphophonological form, due to a general well-formedness template of Hungarian, banning any sequence of analytic affixes (Rebrus 2000; Bartos 1999). These considerations are irrelevant to our main issues, and moreover, the T ~ Mod relation has the same syntactic-semantic properties, without this morphophonological complication.

5. Naturally, it is also possible, in principle, to relegate the whole issue of scope to semantics, but this is not a desirable option, I believe: (i) this step gives up the idea of syntactic scope representation altogether, (ii) it is highly unlikely that a non-stipulative semantic account can be given of the scope variance pattern, especially *vis-à-vis* the fact that the scope inversion possibilities observed in (2) are mysteriously lost in (3b), where all three inflectional categories are marked – whereas this will be the most natural consequence of the analysis advocated here, and in Bartos (1999, 2000b).

6. The problematic nature of head adjunction with respect to c-command is a major reason for abandoning head-movement altogether, because it needs some extension of the notion/definition of c-command to rule in the connection between an adjoined head and its trace as legitimate – see e.g. Brody (1997) for discussion.

7. The analysis proposed subsequently is not in line with Kayne's (1998) program and claims, either: he proposes to derive scope via overt phrasal movement – an option I will rule

out for morphological reasons (see the discussion of Koopman & Szabolcsi's 2000 model below). But as far as I can judge, my model is immune to Kayne's general criticism of covert (=invisible) movement.

8. This model is very similar to that of Frampton and Gutmann (1999, 2000), arrived at independently, by entirely different considerations.

9. There is feedback from morphology to syntax, too, occasionally triggering syntactic repair mechanisms, but the cases we focus on here do not involve such effects. The case of V-expletive insertion mentioned in Note 4 is an instance of this, though. See Bartos (2000b) for more on this.

10. But this version of strict cyclicity is not identical to that of lexical morphology/phonology: here each application of Merge in syntax induces a new cycle in morphology, running on-line with syntax, and the output of each such cycle is an opaque domain for operations in subsequent cycles.

11. The raising of Mod over T is in violation of the Head Movement Constraint, which, however, does not have a clear status in minimalist theories. It used to be reduced to the ECP in GB models, but the ECP is absent from minimalism. If head movement is not distinct in nature from other types of movement (as is desirable), it should fall under the same sorts of locality constraints, such as relativized minimality, encoded in the definition of movement/attraction by Chomsky (1995). But even in this scenario, T is closer to the "attractor", than Mod, so some notion of equidistance must be invoked here – conceptually, the likeliest reason why T and Mod count as equidistant for "M" is that they are part of the same functional projectional template ("encapsulated sequence"), but it is also possible to relate this property to the fact that by the time "M" is inserted, and begins to attract, Mod and T are part of the same chain, and that is why "M" sees no difference between them in distance.

12. One might worry about the infinitive endings (-*ni*) appearing on each verb. They do not pose any serious problem, however: they simply come in between two Vs, as their syntactic positions, possibly T⁰ heads, also intervene between the Vs. Although it is somewhat unusual for an affix to reappear in a word form again and again, it is by no means unique to this case – for example, several plural markers can "iterate" on noun forms bearing the so-called anaphoric possessive marker (also iterated itself) in Hungarian, e.g.: *Péter-é-i-é-i-...* 'those of those of ... of Peter', cf.:

- (i) *Ezek a ruhák nem Mari fiainak ruhái, hanem*
 these the clothes not Mary son-PL-DAT clothes-PL but
Péter-é-i-é-i.
 Peter-POSS-PL-POSS-PL
 'These clothes are not Mary's sons' clothes, but those (= the clothes) of those (= the sons) of Peter.'

Moreover, Bartos (2000a) also toys with the idea that the infinitive marker has no morphemic status, it is just a vocabulary item (a morph) inserted to a position created by fission (Halle & Marantz 1993) in morphology. In fact, the infinitives are base forms of V, in need of being distinguished by way of this fission from the present 3sg finite forms, which happen to look like base forms, because the present 3sg ending is phonologically null. If this is true, then the infinitive markers are even less of a problem in the roll-up structures.

13. Overt raising of the root V to such a higher head could be an option, but either there is no such thing as adjunction-type head movement at all, or the intermediate Vs block such movement by relativized minimality.
14. These examples are due to Ildikó Tóth (p.c.).
15. Alternatively, it may be the case that for the complex to be accessible for the derivational affixation, its right end cannot bear an inflectional affix, like the infinitival ending *-ni*, so the underlyingly present infinitival ending is truncated, or maybe never even appears on that V, especially if the infinitives are base forms really, the *-ni* ending being a fissional morph, cf. Note 12.
16. Note, in passing, that ruling out this case causes great pains to Koopman and Szabolcsi, in a phrasal movement approach to roll-up, too, cf. their Section 4.4.
17. As has been in the text above, capital letters at the column heads signal the placement slots, while small roman numerals split under the different construction types at the row headings stand for the different adverbs.
18. At worst, placing it in some of the intermediate positions is slightly odd for some speakers.
19. Under a V-raising analysis of roll-up, the final adverb position of the full and partial roll-up structures comprises the final and all of the intervening positions of the straight order structure, whereas under a morphosyntactic merger analysis, with the whole roll-up cluster as an extended word pronounced in the position of the lowest V, the final adverb position still means clause/VP-final, and it is the position immediately preceding the roll-up sequence that comprises the intervening adverb positions, as well as the position immediately preceding the first infinitive, of the straight order construction.

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Infinitival complements of modals in Hungarian and in German

Ildikó Tóth

1. Introduction

Both in Hungarian and in German there is a relatively well-defined set of verbs that can participate in the formation of verbal complexes. These verbal complexes always contain one finite verb and one or more infinitival verbs and show a particular behavior with respect to several syntactic phenomena. The infinitival verbs in a verbal complex can appear either in a straight order (where the linear order of the verbs corresponds to their structural prominence) or in an inverse order. A verbal complex is claimed to consist of one lexical verb and several auxiliary/functional verbs that form one clausal domain. The lexical verb assigns theta-roles but the auxiliary verbs have no thematic structure of their own.

Modal verbs can also participate in the formation of verbal complexes both in Hungarian and in German. A modal can either be the topmost finite verb of the verbal complex or it can be one of the infinitival verbs as illustrated in (1) and (2):

- (1) a. *Jánosnak kell úszni tudni.*
John-DAT must swim-INF can-INF
'John must be able to swim.'
- b. *Jánosnak fog kelleni úszni.*
John-DAT will must-INF swim-INF
'John will have to swim.'
- (2) a. *...weil Hans schwimmen können muss.*
because John swim-INF can-INF must
'... because John must be able to swim.'
- b. *...weil Hans schwimmen müssen wird.*
because John swim-INF must-INF will
'...because John will have to swim.'

The striking similarity of verbal complexes in Germanic and in Hungarian has led many researchers to propose a uniform account of verb complex formation.¹

In this paper I examine the embedding possibilities of modals in Hungarian and in German. I investigate the behavior of personal and impersonal passive constructions and weather-expressions under modal verbs. These constructions exhibit different properties in the two languages. Both personal and impersonal passive constructions and weather-expressions are grammatical in German when embedded under modals. In Hungarian, however, only personal resultatives give grammatical results.

I propose an analysis of this contrast based on the different structural properties of the infinitival complement in the two languages. I argue that while modals in Hungarian take a clausal complement, German modals appear in mono-clausal structures with no functional projections between the modal and the infinitival verb. This difference between Hungarian and German modals provides a natural account for the different embedding possibilities of modals in the two languages. As a consequence, I conclude that the ability to participate in verb complex formation does not necessarily entail that modal verbs in Hungarian and in German appear in identical structural configurations.

2. Data

2.1 Modals and inflected infinitives

In Hungarian predicates expressing modality take infinitival argument clauses with inflection on the infinitive.² The following modal predicates can take infinitival complements: *kell* ‘must’, *muszáj* ‘must’, *kellene* ‘should’, *szabad* ‘may’, *illik* ‘should’ and *lehet* ‘may’.

- (3) a. *Nem kell az ebédnek délre kész len-ni-(e).*
 not must the lunch-DAT by.noon ready be-INF-3SG
 ‘Lunch need not be ready by noon.’ (i.e. ‘It is not required that lunch be ready by noon.’)
- b. *Nem kellene ennyit dolgoz-ni-uk.*
 not should so.much-ACC work-INF-3PL
 ‘They should not work so much.’
- c. *Nem kellene ennyit dolgoz-ni.*
 not should so.much-ACC work-INF
 ‘People/One should not work so much.’

As indicated in (3a), the agreement marker on the infinitive is optional when an overt dative DP/pronoun is present. In (3b) the situation is different since no overt

DP/pronoun is present. In such cases agreement markers must be spelt out to identify the person and number features of the phonetically null subject. As (3c) illustrates, uninflected infinitives are also allowed in the construction at hand, even if no overt dative DP is present. In this case, however, the subject of the infinitive receives an arbitrary interpretation.

As discussed in detail in Tóth (2000), the subject of the infinitival clause embedded under modals bears dative Case. This is evident in (3a), where a dative marked subject is overtly present. Since the grammaticality of (3a) with a dative subject does not depend on the presence of overt agreement, I assume that dative Case is always available for the subject of the infinitival clause under modals.

2.2 Impersonal/personal passive constructions

German personal and impersonal passive constructions have been investigated extensively. In (4) I illustrate these constructions for both the (stative) *sein*-passive and the (eventive) *werden*-passive.

- (4) a. *Um 8 Uhr war das Frühstück / es schon serviert.*
at 8 o'clock was the breakfast / it already served
'At 8 o'clock breakfast/it was already served.' (personal *sein*-passive)
- b. *Um 8 Uhr war (*es) schon serviert.*
at 8 o'clock was already served
'At 8 o'clock serving was already done.' (impers. *sein*-passive)
- c. *Um 8 Uhr wurde schon gearbeitet.*
at 8 o'clock *werden*-3SG.PAST already worked
'At 8 o'clock working was already being done.' (i.e. people were working)
(impers. *werden*-passive)

Hungarian has no verbal passives, neither personal nor impersonal ones. Constructions corresponding to (4c) cannot be formed. There is, however, a construction that corresponds to the German *sein*-passive given in (4a–b). It is a passive construction in the sense that the underlying object (if there is one) corresponds to the derived syntactic subject. The construction has a stative resultative reading: it describes the resultant state of a previous event. Resultative participles are formed in Hungarian by the suffix *-va/-ve*. *Va*-participles and the copula together give rise to resultative constructions.³ Such constructions can be personal or impersonal depending on the properties of the base verb. Personal resultatives can be derived from (most) transitive verbs and from unaccusatives. The derivation of impersonal resultatives is more restricted: they can only be derived from a limited number of intransitive verbs. These intransitives all share the characteristics that (a) they have a transitive counterpart and (b) the 'missing' object is typical/cognate

in the sense that the lexical meaning of the verb implies what objects we are talking about.⁴ Apart from some idiosyncratic variation, the class of verbs that can be used in impersonal passives/resultatives are essentially the same in German and in Hungarian.

- (5) a. *Az asztal meg van terít-ve.*
 the table VM is lay-VA
 'The table is laid.' (personal resultative)
- b. *Ma este is szépen meg volt terít-ve.*
 today evening also nicely VM was lay-VA
 'Table-laying was nicely done this evening as well.' (The table was laid nicely.) (impersonal resultative)

Let us consider now whether German impersonal constructions are grammatical when embedded under modals. (6a) and (6b, c) show that there is no difference between personal and impersonal passive constructions when they appear under modal verbs.

- (6) a. *Um 8 Uhr muss schon das Frühstück serviert sein.*
 at 8 o'clock must already the breakfast served be
 'At 8 o'clock breakfast must already be served.'
- b. *Um 8 Uhr muss schon serviert sein.*
 at 8 o'clock must already served be
 'At 8 o'clock serving must already be done.'
- c. *Heute muss gesungen werden.*
 today must sung werden-INF
 'Singing must be done today.'

In Hungarian resultative constructions exhibit a surprising split when embedded under modal verbs that has gone unnoticed in the literature. As discussed in 2.1, modal verbs in Hungarian can take infinitival subject clauses with agreement marking on the infinitive. When infinitival clauses containing a resultative participle are embedded under modals, a clear-cut asymmetry arises between personal and impersonal resultatives:

- (7) a. *Ma este nem kell [az asztal-nak meg-terít-ve len-ni-(e)].*
 today evening not must the table-DAT VM-lay-VA be-INF-3SG
 'Today in the evening the table need not be laid.'
- b. **Ma este nem kell [olyan szépen meg-terít-ve len-ni-e].*
 today evening not must so nicely VM-lay-VA be-INF-3SG
 'Today in the evening table-laying need not be done so nicely.'

- c. **Ma este nem kell [olyan szépen meg-terít-ve len-ni].*
today evening not must so nicely VM-lay-VA be-INF
‘Today in the evening table-laying need not be done so nicely.’

As shown in (7a), personal resultatives are grammatical. Impersonal resultatives, however, are ungrammatical both with inflected and uninflected infinitives, as (7b, c) illustrate.

It should be noted that 3SG agreement on the infinitive with an argumental *pro* subject is grammatical, i.e. when the infinitival clause contains a personal resultative. (7b) is only ungrammatical on the impersonal reading.

- (8) *Ma este nem kell [pro meg-terít-ve len-ni-e].*
today evening not must VM-lay-VA be-INF-3SG
‘Today in the evening it (= this/that table) need not be laid.’

2.3 Modals compared with raising and control predicates

In order to place modals into wider context in both languages let us extend our data to raising predicates. In German we see that modals behave identically to the raising predicate *scheinen*:

- (9) a. ...*weil das Frühstück / es serviert zu sein scheint*
because the breakfast / it served to be seems
‘because breakfast/it seems to be served’
b. ...*weil (*es) serviert zu sein scheint*
because served to be seems
‘because it seems that serving has been done.’

Modals in Hungarian behave differently from raising predicates *látszik* ‘seem’ and *tűnik* ‘seem’. These raising predicates cannot take inflected infinitives. The subject cannot check dative Case in the embedded infinitival ‘clause’. It must move to the matrix clause to check its Case feature and it always surfaces with nominative Case morphology and never with dative Case. Under these raising predicates both personal and impersonal resultatives are grammatical.

- (10) a. *Az asztal még nem látszik meg-terít-ve len-ni.*
the table yet not seems VM-lay-VA be-INF
‘The table does not seem to be laid yet.’
b. *Még nem látszik meg-terít-ve len-ni.*
yet not seems VM-lay-VA be-INF
‘Table-laying does not seem to be done yet.’

Kenesei (2000) claims that Hungarian has three “auxiliary” verbs: *szokott* ‘usually do’, *fog* ‘will’, *talál* ‘happen to’. He sets up semantic and morphological criteria for a verb to count as an “auxiliary”. Morphologically, “auxiliaries” have a defective paradigm. They have no non-finite form and no past tense form. The semantic criterion is that auxiliaries have no thematic grid and therefore cannot assign any θ -role. Syntactically, these verbs behave like the raising predicates introduced above. The subject raises to the subject position of the finite clause in order to check nominative Case. Similarly to what we see in (10), the verbs *szokott*, *fog*, *talál* also allow both personal and impersonal resultative constructions.

- (11) a. *Este hatkor az asztal nem szokott meg-terít-ve len-ni.*
 evening six-at the table not usually-is VM-lay-VA be-INF
 ‘At six in the evening the table is usually not laid.’
 b. *Este hatkor nem szokott meg-terít-ve len-ni.*
 evening six-at not usually-is VM-lay-VA be-INF
 ‘At six in the evening table-laying is usually not done.’

The contrast we see in Hungarian with modals ((7a) vs. (7c)) can also be found in German in constructions that have been called non-obligatory control constructions (NOC) (modulo the unavailability of structural Case for the embedded subject and the unavailability of inflection on the infinitive: there is no counterpart to (7a)):

- (12) a. *Es ist möglich [PRO_{arb} geliebt zu werden].*
 it is possible loved to be
 ‘It is possible to be loved.’
 b. **Es ist möglich [um 8 Uhr serviert zu sein].*
 it is possible at 8 o’clock served to be
 intended meaning: ‘It is possible [for the serving to be done at 8 o’clock].’
 c. **Es ist möglich [gearbeitet zu werden].*
 it is possible worked to werden
 intended meaning: ‘It is possible [for there to be working].’

In (12) we see that only personal passive constructions can be embedded under *möglich* giving rise to an arbitrarily interpreted null subject in the embedded clause. The split between personal and impersonal constructions that appears under *möglich* and the Hungarian modals (cf. (7)) can also be seen with Hungarian adjectival monadic predicates that select a clausal argument.⁵

- (13) *Jó érzés [pro_{arb} megbecsül-ve lenni].*
 good feeling appreciate-VA be-INF
 ‘It is a good feeling to be appreciated.’

- (14) a. *Este hatra nem fontos [a szobá-nak ki-takarít-va
evening six-by not important the room-DAT VM-clean-VA
len-ni-(e)].*
be-INF-3SG
'It is not important [for the room to be cleaned by six in the evening].'
- b. **Este hatra nem fontos [ki-takarít-va len-ni-e].*
evening six-by not important VM-clean-VA be-INF-3SG
'It is not important [for the cleaning to be done by six in the evening].'
- c. **Este hatra nem fontos [ki-takarít-va len-ni].*
evening six-by not important VM-clean-VA be-INF
'It is not important [for the cleaning to be done by six in the evening].'

2.4 Weather verbs under modals

To complete the data concerning the embedding possibilities of modal verbs, let us consider if weather expressions are grammatical under modals. As (15) illustrates, in German weather verbs are grammatical under modals and under the raising verb *scheinen* and ungrammatical in NOC constructions.

- (15) a. *Morgen kann es regnen.*
tomorrow can it rain
'It can rain tomorrow.'
- b. *Dort scheint [es zu regnen].*
there seems it to rain
'It seems to be raining over there.'
- c. **Es ist möglich [zu regnen].*
it is possible to rain
'It is possible for it to rain.'

In Hungarian, weather expressions can be embedded under raising predicates just like in German.⁶

- (16) a. *Május-ban többet látszik es-ni.*
May-INESS more seems rain-INF
'It seems to rain more in May.'
- b. *Május-ban többet szokott es-ni.*
May-INESS more usually-does rain-INF
'In May it usually rains more.'

Weather expressions, however, are grammatical under modals and NOC adjectival predicates only if the embedded infinitive is inflected. They are ungrammatical with bare infinitives.

- (17) a. *Májusban többet kellene es-ni-e.*
May-INESS more should rain-INF-3SG
‘It should rain more in May.’
b. **Májusban többet kellene es-ni.*
May-INESS more should rain-INF
‘It should rain more in May.’
- (18) a. *Fontos májusban sokat es-ni-e.*
important May-INESS much rain-INF-3SG
‘It is important for it to rain a lot in May.’
b. **Fontos májusban sokat es-ni.*
important May-INESS much rain-INF
‘It is important to rain a lot in May.’

The following three tables summarize the data discussed above.

German			
	Raising constructions		NOC constructions with no matrix controller
	raising verbs <i>scheinen</i>	modals <i>müssen, können, dürfen</i> etc.	adjectival predicate <i>möglich</i>
personal passive	OK (9a)	OK (6a)	OK (PRO _{arb} subject) (12a)
impersonal passive	OK (9b)	OK (6b, c)	* (12b, c)
weather verbs	OK (15b)	OK (15a)	* (15c)

Hungarian uninflected infinitives ⁷			
	Raising		NOC constructions with no matrix controller
	raising verbs <i>szokott, talál, fog</i>	modals <i>kell(ene), muszáj, szabad(na)</i> etc.	adjectival predicate <i>fontos, szükséges</i>
personal resultative	OK (11a)	OK (7a)	OK (dative DP subj. (14a); PRO _{arb} / <i>pro</i> _{arb} (13))
impersonal resultative	OK (11b)	* (7c)	* (14c)
weather verbs	OK (16)	* (17b)	* (18b)

Hungarian inflected infinitives

	Raising		NOC constructions with no matrix controller
	raising verbs <i>szokott, talál, fog</i>	modals <i>kell(ene), muszáj, szabad(na)</i> etc.	adjectival predicate <i>fontos, szükséges</i>
personal resultative	NA	OK (7a)	OK (dative DP subj. (14a))
impersonal resultative	NA	* (7b)	* (14b)
weather verbs	NA	OK (17a)	OK (18a)

3. Raising versus control: ν P and CP complements

In this section I provide an analysis of the observed data. First, I examine standard accounts for German in view of the Hungarian facts. Then I propose an alternative analysis based on Speas' (1994, 1995) Principle of Economy of Projection. In this section only uninflected infinitives will be considered. In Section 5 the question of inflected infinitives will be addressed.

3.1 Problems with pro_{expl}

On the basis of the paradigm given in (19), several linguists (Cardinaletti 1990; Grewendorf 1989, 1990; Koster 1986; Platzack 1987; Safir 1985; Sternefeld 1985) have proposed that German is a semi-pro-drop language, allowing pro-drop of expletives but not pro-drop of (quasi)-arguments. The semi-pro-drop character of German has been claimed to account for (19).

- (19) a. *Gestern kam (*es) ein Junge.*
yesterday came EXPL a boy
'There came a boy yesterday.'
- b. *dass (*es) getanzt wurde.*
that EXPL danced was
'that people danced yesterday.'
- c. *dass (*es) schon serviert war.*
that EXPL already served was
'that serving has already been done.'
- d. *Gestern schneite *(es).*
yesterday snowed it
'It snowed yesterday.'
- e. *Gestern kam *(er).*
yesterday came he
'He arrived yesterday.'

As (19a–c) indicate, in presentational sentences and in impersonal passive constructions (both in the case of *werden*- and *sein*-passive) a clause internal overt expletive subject is excluded.⁸ With weather verbs the ‘quasi-argument’ must be overt and finally, argumental *pro* is not licensed either as shown in (19d–e).

One of the main arguments for postulating *pro*_{arb} is the contrast shown in (20) (= (12)).

- (20) a. *Es ist möglich* [*PRO*_{arb} *geliebt zu werden*].
 it is possible loved to be
 ‘It is possible to be loved.’
 b. **Es ist möglich* [*um 8 Uhr serviert zu sein*].
 it is possible at 8 o’clock served to be
 intended meaning: ‘It is possible [for the serving to be done at 8 o’clock].’
 c. **Es ist möglich* [*gearbeitet zu werden*].
 it is possible worked to *werden*
 intended meaning: ‘It is possible [for there to be working].’

Safir (1985) argues that a null expletive subject in German is not only possible, but is in fact obligatory. His argument is that if Spec,IP is not projected in impersonal constructions then the ungrammaticality of (20b, c) is unexpected. No element requires Case and no unassigned theta-roles remain. If, however, impersonal constructions obligatorily contain a grammatical subject in Spec,IP, then ungrammaticality of (20b, c) is easily explained. There is no possible element that could fulfill the subject function. A *pro*_{expl} cannot appear since Case is not available for it and a PRO subject cannot appear because PRO always requires a θ -role and there is no θ -role available in impersonal constructions.

I believe that a closer look at control constructions indicates that even if Safir’s conclusion is right about the existence of null expletives (a question that I will address below), his line of argumentation is flawed. In particular, it is not the lack of θ -role *per se* in the embedded clause that makes (20b, c) ungrammatical. Consider the following contrast:

- (21) a. *Es_i regnet* [*ohne PRO_i zu schneien*]
 EXPL rains without to snow
 ‘It rains without snowing.’
 b. **Es ist möglich* [*PRO zu regnen*].
 EXPL is possible to rain
 ‘It is possible for it to rain.’

In (21a) the controlled PRO subject of the weather-verb is grammatical. Given the assumption that PRO can never be an expletive and always needs a theta-role, (21a)

shows that the theta-role assigned to the ‘quasi-argumental’ subject of weather-verbs is sufficient for PRO to be licit. According to Safir’s argumentation, (21b) is expected to be grammatical, contrary to fact. Although the uncontrolled PRO in (21b) has the same ‘quasi-argumental’ status as controlled PRO in (21a), the former construction is ungrammatical.

The relevant difference between (21a) and (21b) is the controlled versus uncontrolled status of PRO. PRO, as all empty categories, must be minimally content-identified. This can be achieved in two ways. PRO can be identified by participating in a referential dependency, i.e. by being controlled by a lexical antecedent. Alternatively, when there is no lexical antecedent available for PRO, PRO is identified by a default rule that assigns the semantic feature [+human] to contentless empty categories. This gives us the following generalization:

- (22) In non-obligatory control constructions with no matrix controller the subject of the infinitival clause must be [+human].

According to (22), (21b) is ungrammatical because the [+human] PRO_{arb} cannot be the subject of weather verbs. (21a) is grammatical because no humanness restriction applies when PRO participates in a referential dependency. The controller can be a non-human, atmospheric *es*.

Returning now to the contrast shown in (20), we see how Safir’s argumentation can be remedied to account for the ungrammaticality of (20b, c) and also give the right prediction for (21b). Impersonal passive constructions in German have a null expletive subject. In (20b, c) *pro*_{expl} cannot appear due to lack of Case. A PRO subject cannot appear either because antecedentless PRO is always interpreted as [+human], a semantic requirement that cannot be satisfied by the non-argumental subject of impersonal constructions. In other words, antecedentless expletive PRO does not exist and therefore the infinitival clause cannot be an impersonal construction. This line of reasoning crucially relies on the assumption that the impersonal passive constructions always contain a null expletive subject. The null subject is present since the EPP is universal and it is empty since German is a semi-pro-drop language.

In this paper I want to propose an alternative analysis for two reasons. First, as argued by Brander (1993), Cabredo-Hofherr (2000) and Haider (1991, 1993) among others, the semi-pro-drop analysis faces several problems and Safir’s account heavily relies on it. The empirical problems concern both German data and cross-linguistic data within Germanic languages. For reasons of space the reader is referred to these papers for detailed argumentations on this point. Second, Safir’s analysis cannot be extended to the Hungarian data. First I show why this is the case and then in the next subsections I spell out my alternative analysis.

In (23) and (24) I give a schematic representation of Safir's explanation for the ungrammaticality of impersonal passive constructions under *möglich*-type adjectives as opposed to their grammaticality under raising verbs and modals.

(23) PERSONAL PASSIVE IN GERMAN:

- a. $DP_{subj_i} V_{raising} [t_i V_{passive}]$ (cf. (9a)) Nom. Case for subj. in matrix clause
- b. $DP_{subj_i} V_{modal} [t_i V_{passive}]$ (cf. (6a)) Nom. Case for subj. in matrix clause
- c. $Adj [PRO_{arb} V_{passive}]$ (cf. (12a)) No Case in embedded clause and raising not possible $\Rightarrow PRO_{arb}$

(24) IMPERSONAL PASSIVE IN GERMAN:

- a. $pro_{expl_i} V_{raising} [t_i V_{passive}]$ (cf. (9b)) Nom. Case for pro_{expl} in matrix clause
- b. $pro_{expl_i} V_{modal} [t_i V_{passive}]$ (cf. (6b, c)) Nom. Case for pro_{expl} in matrix clause
- c. $*Adj [PRO_{arb} V_{passive}]$ (cf. (12b, c)) No Case in embedded clause and raising not possible $\Rightarrow PRO_{arb} \Rightarrow$ needs θ -role \Rightarrow *impersonal construction

If we want to extend Safir's analysis to Hungarian personal resultatives with uninflected infinitive, we have to assume that the subject of uninflected infinitives is Caseless and therefore must be PRO. This assumption is problematic in view of the fact that a lexical dative marked subject can appear in the infinitival clause. The possibility of the dative subject does not depend on the presence of agreement marking on the infinitive. This was shown in (7a) and (14a), where agreement on the infinitive is optional. The extension of Safir's analysis to the Hungarian data is shown in (25) and (26).

(25) PERSONAL RESULTATIVES IN HUNGARIAN:

- a. $DP_{subj_i} V_{raising} [t_i V_{passive}]$ (cf. (11a)) Nom. Case for subj. in matrix clause
- b. $V_{modal} [DP_{subject} V_{passive}]$ (cf. (7a)) Dative Case in embedded clause
- c. $Adj [DP_{subject} V_{passive}]$ (cf. (14a)) Dative Case in embedded clause
- d. $Adj [PRO_{arb_i} V_{passive}]$ (cf. (13)) No Case in embedded clause and raising not possible $\Rightarrow PRO_{arb}$

(26) IMPERSONAL RESULTATIVES

(assuming that they also contain a null expletive subject):

- | | | | |
|----|---|-------------|--|
| a. | pro_{expl_i} V_{raising} [t_i V_{passive}] | (cf. (11b)) | Nom. Case for pro_{expl} in matrix clause |
| b. | $*V_{\text{modal}}$ [PRO_{arb} V_{passive}] | (cf. (7c)) | No Case in embedded clause and |
| c. | $*Adj$ [PRO_{arb} V_{passive}] | (cf. (14c)) | |
- raising not possible $\Rightarrow PRO_{\text{arb}}$
 \Rightarrow needs θ -role \Rightarrow *impersonal constr.

The assumption that underlines the explanation for the ungrammaticality of (26b, c) cannot be upheld in view of the fact that dative Case is always available for a lexical subject of the infinitival clause under modals and control predicates like *fontos*, independently of whether morphological agreement is spelt out.⁹ In what follows an alternative account is given that does not rely on the Case properties of the null embedded subject.

3.2 A split between finite and infinitival clauses

It is obvious that if we assume that the subject position is never projected in impersonal passive constructions in German (and in other languages where no overt expletive appears) then we cannot appeal to the restriction given in (22) since there is no subject in the embedded infinitival clause to begin with. It is, however, possible to reject the universality of subjects in spec,IP and still appeal to (22). The basic idea is that there is an important difference between finite and infinitival clauses that forces the presence of a (null) subject in the latter but not in the former. Let us assume that a finite impersonal passive construction either contains an overt expletive or it contains no expletive at all. The EPP is not universal and it is a parametric option whether subjects must move to spec,IP (as in English and French) or not (as in German and Hungarian). Let us further assume that Speas' (1994, 1995) Principle of Economy of Projection (PEP) holds:

(27) PRINCIPLE OF ECONOMY OF PROJECTION (PEP):

Project XP only if XP has content.

The PEP states that projections are licit only if either the head position or the specifier position has content, where 'having content' is defined as either a distinct phonological matrix or a distinct semantic matrix. We can view the PEP as a universal constraint against unspecified heads and unspecified projections. If neither the head nor the specifier of the head is specified through some content, then the projection is not licensed and this leads to ungrammaticality. Capitalizing on this idea, I propose that the essential difference between finite and infinitival clauses

concerns the feature content of IP. In finite clauses I^0 contains tense and agreement features. In infinitival clauses with uninflected infinitives, however, I^0 has no independent tense and agreement specifications.¹⁰ The only way to license the IP projection is to give it content through a contentful specifier position. It is for this reason that infinitival clauses cannot have an IP without the specifier position filled by a content-identified null subject. The null subject is content-identified either by its antecedent or, in the case of antecedentless PRO in non-obligatory control constructions, the assignment of the feature [+human] gives semantic content to the subject and indirectly to the IP projection.¹¹ Given these assumptions, the ungrammaticality of (20b, c) and (21b) is independent from the presence or absence of a structural subject position in the corresponding finite clauses. In (20b, c) and (21b) a subject with semantic content must be present in spec,IP, otherwise IP remains radically empty, violating the PEP.

One of the consequences of the PEP is that an infinitival clause has either a [+human] subject (*pro_{arb}* or *PRO_{arb}*) or a referentially dependent subject (identified by matrix controller or by rich agreement on the infinitive). Furthermore, the PEP does not force the presence of subjects in finite clauses where tense is contentful. Presence of *pro_{expl}* need not be assumed in finite impersonal constructions. It follows that there is a split between finite and infinitival clauses. The former can be truly subjectless, the latter cannot be.¹²

4. Modals and restructuring

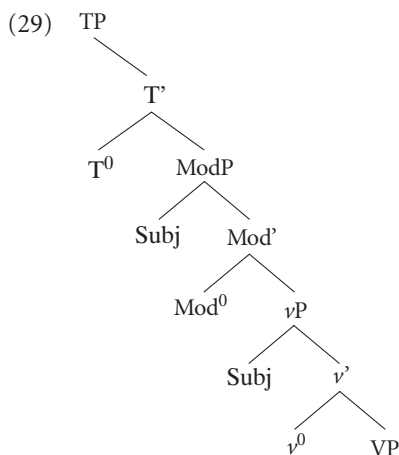
In view of what we have said above, the contrast between the behavior of German and Hungarian modals can be accounted for in a natural way if we assume that Hungarian modals subcategorize for at least an IP complement, while German modals select ν P. Hungarian modals behave like German *möglich*. They take a clausal complement and therefore the functional projections present in the infinitival clause are subject to the PEP. I propose that this difference accounts for the ungrammaticality of (7c) and (17b) and for the grammaticality of (6b, c) and (15a). It follows from the PEP that in the case of uninflected infinitives IP always projects a specifier position. The null subject in Spec,IP must be content-identified either by having a lexical antecedent or by *arb*-assignment. Since non-directed deontic and epistemic modals are monadic predicates with a single clausal argument, no lexical antecedent can appear in the matrix clause.¹³ This assumption is independently supported by empirical facts.

Wurmbrand (1999: Ch. 6) proposes that modals and the raising verb *scheinen* involve monoclausal structures in German with only one set of functional projections present. Wurmbrand's arguments in favor of a monoclausal analysis of modal

verbs in German come from the restructuring properties of these constructions and from the morphosyntactic properties of modals and raising verbs. She presents several arguments that support the view that no functional projections are present in the complements of modals and *scheinen*. In particular, modals and *scheinen* allow the embedded subject to raise to the matrix clause to check nominative Case. They also allow long distance scrambling out of the infinitival clause.

- (28) a. *weil [den Peter]_{SCR} die Frau t_{SCR} zu lieben schien.*
because the Peter the woman to love seemed
‘because the woman seemed to love Peter’.
- b. *[t_{SCR} besuchen sollen] hat nur der Josef [den Peter]_{SCR} t_{VP}*
visit shall has only the Josef the Peter
morgen.
tomorrow
‘Only Josef had to visit Peter tomorrow.’

Wurmbrand (1999) proposes the following structure for German modals and *scheinen*.



The structure given in (29) for modals in German explains why impersonal passives and weather-verbs can appear under modals. In the monoclausal structure given in (29) no functional projection remains without content. The functional heads have semantic or phonological content. In the case of root readings, Mod⁰ contains the modal verbs, T⁰ contains finite tense and Agr⁰, if projected as a separate functional projection, contains agreement morphology. In the case of epistemic reading and *scheinen*, no ModP is present at all. T⁰ is contentful since the modal is generated in that functional head. Consequently, the Principle of Economy of

Projection (PEP) does not take effect in the embedded ‘clause’ and the presence of a contentful subject is not forced by it.

The predicate *möglich*, however, exhibits no restructuring properties. Raising is impossible from its infinitival complement and so is long distance scrambling. This follows if its complement is analyzed as a full clause that constitutes an opaque domain.

- (30) a. **Peter ist möglich* [_{t_i} *zu kommen*].
 Peter is possible to come
 ‘It is possible that Peter comes.’
 b. **Es ist* [*das Buch*]_{SCR} *möglich* [_{PRO} _{t_{SCR}} *zu lesen*]
 it is the book possible to read
 ‘It is possible to read the book.’

In Hungarian, the subject of the infinitival complement of modals can check dative Case within the infinitival clause itself (cf. (31a)). Consequently, the subject can never undergo A-movement out of the infinitival clause for Case reasons. Only A'-movement is possible, for instance for focusing or topicalization (cf. (31b)). Modals with an infinitival complement never appear with a nominative subject. Nominative Case can only be checked in the finite matrix clause and the Case-marked subject of the infinitive cannot move there, as illustrated in (31c).

- (31) a. *Nem kell* [_{CP} *az ebédnek délre kész len-ni-e*].
 not must the lunch-DAT by-noon ready be-INF-3SG
 ‘Lunch need not be ready by noon.’ (i.e. ‘It is not required that lunch be ready by noon.’)
 b. *AZ EBÉDNEK_i nem kell* [_{t_i} *délre kész len-ni-e*].
 the lunch-DAT not must by-noon ready be-INF-3SG
 ‘It is the lunch that need not be ready by noon.’
 c. **Az ebéd_i nem kell* [_{t_i} *délre kész len-ni-e*].
 the lunch-NOM not must by-noon ready be-INF-3SG
 ‘Lunch need not be ready by noon.’

- (32) [_{Spec} I⁰ [_{modal} [_{CP} [_{IP} DP_{DAT} I⁰ [_{VP} ... V_{infinitive}]]]]]
-

The conclusion that modals in these two languages have distinct complement structures is not surprising since it is well known that the semantic notion ‘modality’ comprises elements with different syntactic properties. Adjectives like *possible*, *necessary* can express epistemic modality similarly to the modal ‘auxiliaries’ *may* and *must* (cf. (33) versus (34)). Yet, these adjectives do not participate in a raising structure, can take *that*-clauses and an overt subject can appear in the infinitival

complement, licensed by *for* in C. These modal adjectives are usually analyzed as taking a full clausal complement.

- (33) a. *It may soon rain.*
b. *Opening hands must contain thirteen points.*
- (34) a. *It is possible* [_{CP} *that it will soon rain*].
b. *It is necessary* [_{CP} *that opening hands contain thirteen points*].
c. *It is possible* [_{CP} *for it to rain soon*].
d. *It is necessary* [_{CP} *for opening hands to contain thirteen points*].
- (35) a. **It is possible to rain soon.*
b. **Opening hands are necessary to contain thirteen points.*

The same mismatch between syntax and semantics is observed in German. Both *möglich* and *können* can express epistemic modality, but only the infinitival complement of *können* exhibits restructuring properties and instantiates a monoclausal structure allowing for embedded impersonal passives and weather-verbs. The upshot of the above discussion is that Hungarian modals behave syntactically like German and English adjectival predicates with modal force and not like the modal verbs of these languages.

In view of the grammaticality of the impersonal passive construction under the raising verbs *látszik* and *tűnik* ‘seem’ and the three “auxiliaries” *szokott* ‘usually do’, *talál* ‘happen to’ and *fog* ‘will’, I assume that these verbs take a *vP* as their complement. In other words, they have a monoclausal structure, similarly to German modal and raising verbs (cf. also Kenesei (2000), where it is argued that “auxiliary” verbs have a *FinitP* complement).

- (36) [_{CP}...[_{TP} *T*⁰ [*fog/talál/szokott* [_{FinitP} -*ni* [_{vP} *Su* [_{vP}... *V* ...]]]]]]]

With this assumption, the grammaticality of (11b) (repeated here as (37)) follows.

- (37) *Este hatkor nem szokott meg-terít-ve len-ni.*
evening six-at not usually-is VM-lay-VA be-INF
‘At six in the evening table-laying is usually not done.’

So far I have shown that modal verbs in Hungarian exhibit different syntactic behavior than modal verbs in German. I attributed this difference to the ‘size’ of the infinitival complement. Before I end this section I briefly consider the question of restructuring and show that modals in Hungarian do not exhibit any restructuring properties that involve A-movement or head-movement. Therefore there does not seem to be any conclusive evidence against analyzing their clausal argument as involving a CP-structure with its own subject in Spec,IP.

Although languages differ as to where they draw the line between restructuring and non-restructuring verbs, there is consensus among linguists that modal verbs

in German belong to the core cases of restructuring (cf. Haider 1993; Fanselow 1989; Wurmbrand 1999). In fact, it is one of the defining properties of German modal verbs that they allow restructuring. In German this is evidenced by the possibility of long-scrambling (cf. (38)).

- (38) [_{SCR} *besuchen sollen*] *hat nur der Josef [den Peter]_{SCR} t_{VP}*
 visit shall has only the Josef the Peter
morgen.
 tomorrow
 ‘Only Josef had to visit Peter tomorrow.’

These restructuring properties are automatically accounted for if restructuring infinitives have monoclausal structures with no TP and CP projection in the embedded infinitive. A-movement out of the embedded infinitive is unobstructed since there is no intervening maximal projection that counts as barrier for movement.¹⁴

Some Hungarian infinitival constructions also exhibit restructuring properties. These properties include long distance agreement and – according to some – preverb climbing.

Let us first consider the phenomenon of preverb climbing.

- (39) *János fel_i akar [t_i mászni arra a fára].*
 John up wants go-INF that-on the tree-on
 ‘John wants to climb up that tree.’

Some modals exhibit it, while others do not. It is an idiosyncratic property that is determined lexically.

- (40) a. *El_i kell / *muszáj [t_i készül-ni-e az ebédnek délre].*
 PRT must / must be.ready-INF-3SG the lunch-DAT noon-by
 ‘Lunch has to be ready by noon.’
 b. *Muszáj / *kell [el-készül-ni-e az ebédnek délre].*
 must / must PRT-be.ready-INF-3SG the lunch-DAT noon-by
 ‘Lunch has to be ready by noon.’

Kell and *muszáj* are synonyms, both expressing the modal force of necessity or obligation. *Kell* is a stress avoiding verb and therefore cannot appear clause initially where it would receive primary stress. Preverb climbing is required if no other constituent moves to a position preceding the modal. *Muszáj* is not stress avoiding. Consequently, preverb climbing has no trigger and therefore cannot take place.

Preverb climbing, however, cannot be taken as a diagnostic of restructuring. It is an instance of A'-movement that moves the preverb of the embedded infinitive to the focus position of the matrix clause. Such movement can take place out of a

CP clause as well, as long as there is no filled Spec,FP in the embedded clause (cf. Szendrői 1999).

- (41) *Délre el kell, hogy készüljön az ebéd.*
noon-by PRT must that be.ready-SUBJ-3SG the lunch
‘It must happen that lunch is ready by noon.’

Long distance object agreement is different in nature. It undisputedly involves A-movement/chain. The matrix verb agrees in definiteness with the object argument of the embedded infinitive (see den Dikken 1999).¹⁵

- (42) a. *Fel akar-om hívni Pétert.*
up want-1SG.DEF call-INF Peter-ACC
‘I want to call up Peter.’
b. *Fel akar-ok hívni valakit.*
up want-1SG.INDEF call-INF someone-ACC
‘I want to call up someone.’

Long distance object agreement never occurs with a matrix modal.¹⁶

- (43) a. *Nem kell / *kell-em meghívnom Pétert.*
not must / must-1SG.DEF invite-INF-1SG Peter-ACC
‘I do not have to invite Peter.’
b. *Nem szabad / *szabad-lak meghívnom téged.*
not may / may-1SG.2SG invite-INF-1SG you-ACC
‘I may not invite you.’

Numerous arguments have been accumulated for analyzing the “roll-up” inverse order verbal complex in terms of a head-chain relation (see Bartos 1999; Bródy 1997; É. Kiss 1999 for details).¹⁷ What concerns us here is that the formation of “roll-up” constructions has been claimed to be subject to strict locality. It is not expected to be possible if there is an intervening head that blocks movement of the lower verb to the higher one. As illustrated in (44b), modal verbs can participate in the “roll-up” construction.

- (44) a. *Marinak nem fog kelleni kezdeni tanulni.*
Mary-DAT not will need-INF start-INF study-INF
‘Mary will not need to start to study.’
b. *Marinak nem fog tanulni kezdeni kelleni.*
Mary-DAT not will study-INF start-INF need-INF
‘Mary will not need to start to study.’

In view of the grammaticality of (44b), we have to conclude that monoclausal structure is not a prerequisite for forming a “roll-up” construction. If our analysis

of the infinitival complement of modal verbs is on the right track, then the formation of the inverse order verbal complex can involve more than one lexical verb with its own thematic structure. The presence of an IP projection does not intervene with forming a “roll-up” construction. What seems to be relevant is whether the verbal complex in the inverse order is morphologically uniform. Overt inflection marking on the infinitive cannot appear in Hungarian, and the participial form is ungrammatical in the verbal complex in German.

The infinitival construction embedded under *kelleni* is at least an IP but the intervening I⁰ head does not obstruct the formation of a verb-chain containing the three infinitival verbs.

In conclusion, the structural distinction between Hungarian and German modal constructions argued for in this paper receives independent empirical evidence. This distinction accounts for the grammaticality of impersonal constructions embedded under German modals and their ungrammaticality under Hungarian modals. The contrast in grammaticality between the raising constructions (German: (6b), (9b); Hungarian: (11b)) and modal constructions also follows since the PEP forces the presence of a [+human] subject only in the latter.

5. Inflected infinitives and modals

In Section 3.2 I argued that the ungrammaticality of impersonal resultatives under modals in Hungarian results from a requirement that cannot be satisfied: a [+human] null subject is required by the PEP, but there is no thematic role to be assigned to this subject. I noted in passing that it follows from the PEP that the null subject of an infinitival clause can receive content in three ways: (a) being controlled by a matrix argument, (b) being coindexed with rich agreement on the infinitive, (c) by a default rule assigning the feature [+human]. Option (b) is only available in languages where infinitives can bear rich agreement morphemes – a condition that is satisfied in Hungarian.

In view of this conclusion, it seems problematic that impersonal resultatives are also ungrammatical with inflected infinitives. This was shown in (7b), repeated here as (45).

- (45) **Ma este nem kell [olyan szépen meg-terít-ve len-ni-e].*
 today evening not must so nicely VM-lay-VA be-INF-3SG
 ‘Today in the evening table-laying need not be done so nicely.’

3SG agreement on the infinitive can only license an argumental *pro* subject:

- (46) *Ma este nem kell [olyan szépen pro meg-terít-ve len-ni-e].*
today evening not must so nicely VM-lay-VA be-INF-3SG
‘Today in the evening it (table) need not be laid so nicely.’

The examples in (45) and (46) constitute a minimal pair. The matrix clauses are identical and the embedded clauses differ in one respect. In (45) there is no structural subject while (46) contains a thematic null subject. Since no similar contrast arises in root clauses (cf. (5a) versus (5b)), it is natural to assume that the ungrammaticality of the impersonal resultatives in (45) is in some way connected to the presence of infinitival morphology. In particular, the following generalization holds:

- (47) 3SG agreement marking on the infinitive is incompatible with the absence of a syntactic subject.

Ungrammaticality of (45) is due to the fact that 3SG agreement marking on the infinitive cannot be default agreement. In Section 3.1 I argued that impersonal constructions do not have a subject argument. Consequently, the derivation can only converge if the Agr contains no uninterpretable ϕ -features since there is no nominal element in the structure that could check the ϕ -features of Agr. This only happens in case of default Agr. Default Agr is spelt out at PF as 3SG agreement – the spell-out of the ‘elsewhere’ case. This amounts to saying that the impersonal construction in (5b) involves 3SG default agreement on the finite verb. 3SG agreement morphology on finite verbs is ambiguous and can be both the spell-out of ϕ -features and default agreement.

Third person singular agreement exhibits this double nature across languages: it can be the manifestation of either 3SG pronominal agreement or default agreement.

- (48) AGREEMENT =_{def} α agrees with β if:
a. (Strict Agreement) α and β have identical features
b. (default agreement)
i. β has no gender, no number and no person and
ii. α is third person at PF

In the impersonal constructions (48b) applies. Condition (i) holds since there is no subject at all and clearly a non-existing element has no person, no number and no gender features.

In contrast with 3SG agreement on finite verbs, 3SG on infinitives is unambiguously the spell-out of ϕ -features. (47) therefore follows from (49), a lexical property of the 3SG agreement morpheme on infinitives.

- (49) The 3SG agreement morpheme of the infinitival paradigm always contains ϕ -features. It can never be the spell-out of default agreement.

An essential ingredient of this analysis is the assumption that the availability of default agreement is not an automatic property of agreement morphology. In Hungarian 3SG verbal inflection that appears on finite verbs is ambiguous: it can encode either [3rd person, singular] person- and number-features or default agreement. The latter option, however, is not available for the *-a/-e* suffixes that appear on infinitives. These inflectional suffixes are always fully specified for person and number features and as these features are [–interpretable] on Agr, they must be checked by a nominal element. Such an element, however, is not available in impersonal constructions.

Such a distinction between 3SG agreement marking on finite verb and 3SG marking on infinitives is motivated on morphological basis. The latter is morphologically identical to 3SG agreement marking in the definite conjugation paradigm and to agreement markers found on the head noun of possessive constructions.

- (50) a. *ad-ja*: give-3SG.DEF
 b. *ad-Ø*: give-3SG.INDEF
 c. *in-ni-a*: drink-INF-3SG
 d. *asztal-a*: his table

Default agreement only arises with indefinite conjugation. This follows from Burzio's Generalization and the nature of definite and indefinite conjugation in Hungarian. Default agreement arises only if there is no nominal element that can trigger 'real' agreement, i.e. if no theta-role is assigned to the subject position. In such cases no object can be present since accusative Case is not available. Therefore, in the case of default agreement the verb invariably shows up in the indefinite conjugation bearing a zero affix. It is this zero affix that is ambiguous in Hungarian between unspecified default agreement and 3SG agreement. In other words, the morphological identity of 3SG marking on infinitives and on finite verbs in the definite conjugation strongly supports our claim that the suffix *-a/-e* must always be associated with a theta-marked subject.

The identity of agreement marker in possessive constructions and on infinitives further supports our claim. There are no possessive constructions without a possessor or with a non-thematic expletive possessor. Since the 'Possessor' thematic role must be assigned, an expletive subject or no subject would lead to a violation of the Theta-Criterion. Thus, in possessive constructions the agreement suffix *-a/-e* is always the spell-out of ϕ -features. When no lexical possessor appears the ϕ -features of the 'rich' agreement morpheme are inherited by the null possessor argument of the construction.

In sum, we see that in the definite conjugation and in possessive constructions the 3sg agreement marker *-a/-e* always has a referential subject/possessor argument and can never correspond to default agreement. In the case of these constructions this property follows from independent principles of the grammar. It is natural to assume that the same suffix on the infinitive cannot be the spell-out of default agreement either.

To complete our discussion let us consider weather-verbs. In Hungarian weather-verbs behave on a par with personal resultatives and unlike impersonal resultatives: they are grammatical with inflected infinitives.

- (51) a. *Márciusban már nem kellene havaz-ni-a.*
 March-INESS already not should snow-INF-3SG
 'In March it should not snow already.'
- b. **Márciusban már nem kellene havaz-ni.*
 March-INESS already not should snow-INF
 'In March it should not snow already.'

The above facts can be accounted for in a natural way if we assume that weather-expressions in Hungarian contain a null quasi-argumental subject. The quasi-argumental subject of weather-expressions is pronominal and can check the ϕ -features of Agr. In (51a) 3sg agreement morphology on the infinitive verb is not default agreement. Weather-expressions pattern with personal resultatives because both constructions involve a subject that has ϕ -features. Impersonal constructions, on the other hand, do not have such a subject.

The ungrammaticality of (51b) stems from the fact that the humanness requirement and the weather-verb's special selectional requirement for its 'atmospheric' subject are incompatible. In German weather verbs under *möglich*-type adjectives are ungrammatical for the same reason.

6. Summary

German modals are raising verbs that form a monoclausal structure with their infinitival complements. Their Hungarian counterparts, however, are not raising verbs. Hungarian modals take a clausal complement and structurally they are similar to NOC constructions in German (*möglich*) with the difference that the embedded subject in Hungarian is not Caseless but can check dative Case. When the subject is null it is identified either by agreement morphemes on the infinitive (and is then referential) or receives a default interpretation by *arb* assignment that is subject to the humanness requirement. This assumption together with the Prin-

ciple of Economy of Projection automatically accounts for the ungrammaticality of impersonal constructions under Hungarian modals.

Notes

1. The different word orders in the verbal complexes in examples (1) and (2) are not relevant to the present paper. Here we will only be concerned with the fact that in both languages modals participate in verb complex formation. Of course, any uniform analysis of the two languages must address this question.
2. Modals do not exhaust the group of predicates that take inflected infinitives in Hungarian. In Tóth (2000) an exhaustive list of such predicates is provided. The reader is referred to this monograph for more detail.
3. For a detailed characterization of personal resultatives in Hungarian see Alberti (1998) and de Groot (1987). Impersonal resultatives are first discussed and analyzed in Tóth (1998). I use the term 'resultative' when referring to the Hungarian constructions involving *va*-participles and the copula. The corresponding German examples have been referred to in the generative literature as personal and impersonal adjectival passive (or alternatively as personal and impersonal *sein*-passive). These terms are justified by the fact that the adjectival passive participle exhibits essentially the same distributional properties as underived adjectives. This, however, is not the case in Hungarian. *Va*-participles (i.e. resultative participles) and adjectival participles are in complementary distribution and have rather different syntactic properties (cf. Tóth 1998). To avoid confusion, I will adopt the widely accepted terminology when referring to the Germanic languages but will continue to refer to the Hungarian construction as resultative.
4. Verbs like *pakol*, *rámol*, *csomagol* (all close synonyms meaning 'to pack') and verbs like *kitalarít* 'clean' *kiszellőztet* 'air', *befűt* 'heat', *besötétít* 'darken', etc. can be input to the derivation of an impersonal resultative.
5. Unlike in (12), in (13) the null subject is *pro*, since I assume that dative Case is always available for the subject in the infinitival complement of predicates that allow inflected infinitives.
6. The issue of inflected infinitives does not arise since these predicates never subcategorize for inflected infinitives.
7. In order to facilitate the comparison of Hungarian and German data, I summarize the grammaticality pattern of personal and impersonal constructions separately in separate tables for inflected and uninflected infinitives.
8. An expletive may occur in the specifier position of CP as a placeholder to satisfy the verb second requirement. This requirement, however, can also be satisfied by movement of other phrasal categories into Spec,CP. This use of *es* is irrelevant for our concerns.
9. It follows that the arbitrary reading that we obtain in (25d) cannot be due to the presence of an uncontrolled PRO subject. As I argue below, the null subject is *pro*_{arb}.

10. According to the proposal made in Stowell (1982), infinitival clauses in control constructions have 'irrealis' tense. Stowell's claim can be made compatible with our proposal by assuming that dependent tense is insufficient to make the head of IP (or TP) contentful. As noted by Stowell himself, the irrealis tense of control infinitives is 'irrealis' with respect to the matrix tense, i.e. it is dependent on the matrix tense.
11. A third possibility exists in English where the complementizer *for* assigns Case and allows for a lexical subject in infinitival clauses. In this case it is the lexical DP that gives content to the IP projection. Finally, a fourth possibility exists in Hungarian and European Portuguese where infinitives can bear agreement morphemes. Our proposal in fact correctly predicts that no humanness requirement holds of the null subject of inflected infinitives (see Tóth 2000: Ch. 4).
12. It should be noted, however, that the contrast between the embedding possibilities of Hungarian and German modal verbs is independent from the issue of Dative Case assignment in inflected infinitives. In particular, if we assume that Dative Case is not available in Hungarian for the structural subject of the infinitival complement of modal verbs then the infinitival clause has a [+human] PRO_{arb} subject.
13. In connection with impersonal resultatives and weather-verbs the structure of subject oriented modals does not arise since this reading always requires an animate subject (the receiver of obligation), a requirement clearly incompatible with these constructions.
14. The claim that restructuring infinitives in German involve base-generated VPs has been proposed in Haider (1993) and Wurmbrand (1999), among others. Competing analyses, however, abound. There are several proposals in the literature where restructuring infinitives are IPs (Agr_SP or TP) or CPs and some special mechanism (overt/covert verb raising, raising of Infl/T to the matrix clause or movement of the embedded TP/VP to the embedded Spec,CP – just to name a few) takes place to render the embedded clause transparent for A-movement. I do not even attempt to resolve this issue here. I only wish to point out here that as far as modals and raising verbs are concerned, the empirical facts discussed in the main text (embedding of impersonal passive, weather-verbs) strongly favor a *v*P analysis for the complements of these predicates. I do not, however, mean to say that restructuring properties are always best analyzed as involving a reduced clause structure. This is a question that cannot be addressed here.
15. The only exception is when the subject is first person singular and the object is second person singular. In that case person-number agreement takes place and a special agreement morpheme *-lak/-lek* appears on the verb.
16. It is important to emphasize again that my argumentation does not imply that long distance object agreement in Hungarian must be viewed as evidence for *v*P complementation and monoclausal structure. My point is that modals do not exhibit long distance object agreement, the only clause-union effect that is a potential argument in favor of a reduced complement. Therefore, if it turns out that long distance agreement is best analyzed in terms of reduced clause structure, my conclusion about CP complementation of modals still remains valid.
17. Bartos (1999) differs from Bródy (1997) and É. Kiss (1999) in assuming that the chain is created by morphological merger.

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Agreement and ‘clause union’*

Marcel den Dikken

1. The theoretical claims to be defended

This paper will defend the following general theoretical claims:

- *weak features* can be checked *only* within X^0 ; hence ‘accidentally’ checking weak features under overt-syntactic XP-movement is impossible, and overt-syntactic XP-movement beyond F of a category bearing a feature matching a weak feature of F will bleed the checking of F’s weak feature
- *object agreement* and *accusative Case feature checking* are not tied to aspect, hence not checked in the domain of an aspectual head; both object agreement and accusative Case checking are tied to AgrO (Chomsky 1991, 1993) or v (Chomsky 1995: Ch. 4), the latter opening up a clearer perspective on the mechanics of *faire à* type causative constructions
- ‘*clause union*’ is not a unitary phenomenon; ‘clause union’ effects are a function of the variable placement of v /AgrO and Asp projections and the presence/absence of an embedded IP on the movement path; several ‘levels’ of ‘clause union’ manifest themselves depending on whether both, one or neither of the set $\{v/\text{AgrO}, \text{Asp}\}$ is generated upstairs in multi-verb constructions
- *clitic doubling* involves a possessive noun phrase configuration
- Bošković’s (1997) *Inverse Case Filter* holds; DPs need Case features only if these allow for the (most economic) checking of the matching Case features of non-substantive heads

These claims will be defended with particular reference to a battery of agreement and ‘clause union’ phenomena in Hungarian, giving rise to a number of further claims specific to this language:

- Hungarian *definiteness agreement with objects* and *structural accusative Case-feature checking* involve *feature movement at LF*
- Hungarian *person agreement with objects* involves *clitic movement* in overt syntax

- Hungarian *object clitic movement* is a case of two-step movement: head-adjunction preceded by NP-movement, the latter blocked by intervening A-positions
- Hungarian has *object clitics* for first and second person, not for third person
- Hungarian first and second person object pronouns are *syntactically complex entities*, most having the structure of possessed nominal phrases with the clitic functioning as the possessor and the full pronoun as the possessum, and others featuring a locative/partitive PP and a null indefinite head
- Hungarian *Case and agreement ‘switch’* phenomena under long A'-extraction are the reflex of the combination of a *that-t* avoidance strategy similar to the one employed by the Romance languages and the weakness of the D-features of *v/AgrO*

Before we can go take a look at the four sets of data which will form the backbone of this paper, we will first need to fill in the necessary background knowledge concerning the Hungarian agreement system. This will be the topic of the next section. Section 3 will subsequently present an overview of the facts to be discussed in the remainder of the paper, Sections 4 and following developing their analysis, defending the claims listed in the above on the basis of the facts laid out in Section 3.

2. Notes on Hungarian agreement

As in many other languages, Hungarian finite verbs agree with their subjects in person and number. Hungarian is special, however, in having two sets of subject agreement forms, the choice between them depending (roughly) on the presence of a definite object noun phrase (see Bartos 1997 for more careful discussion; though speaking in terms of definite/indefinite agreement may not ultimately be optimal, for our purposes here this potential simplification will do). The broad generalization that emerges from the data is that the set in (2) is chosen whenever the verb takes a *definite* object, with (1) selected elsewhere (including constructions in which the verb takes no object at all); cf. (3)–(4).

(1) INDEFINITE AGREEMENT (present tense)

- a. -*Vk*
- b. -*sz/-Vl*
- c. - \emptyset
- d. -*unk/-ünk*
- e. -*tok/-tek/-tök*
- f. -*nak/-nek*

- (2) DEFINITE AGREEMENT (present tense)
- a. -*Vm*
 - b. -*Vd*
 - c. -*ja/-i*
 - d. -*juk/-jük*
 - e. -*játok/-itek*
 - f. -*ják/-ik*
- (3) a. *János olvasott-Ø* {Ø / *valamit* / *egy könyvet* /
 János read-PAST-INDEF Ø something-ACC a book-ACC
néhány könyvet / *minden könyvet*}.
 some book-ACC every book-ACC
- b. **János olvast-a* {Ø / *valamit* / *egy könyvet* / *néhány*
 János read-PAST-DEF Ø something-ACC a book-ACC some
könyvet / *minden könyvet*}.
 book-ACC every book-ACC
 'John read / read something / read a book / read some books / read
 every book.'
- (4) a. **János olvasott-Ø* {*azt* / *a könyvet* / *azt a könyvet* /
 János read-PAST-INDEF that the book-ACC that the book-ACC
Mari könyvét / *Marinak a könyvét*}.
 Mari book-3SG-ACC Mari-DAT the book-3SG-ACC
- b. *János olvast-a* {*azt* / *a könyvet* / *azt a könyvet* /
 János read-PAST-DEF that the book-ACC that the book-ACC
Mari könyvét / *Marinak a könyvét*}.
 Mari book-3SG-ACC Mari-DAT the book-3SG-ACC
 'John read it / read the book / read that book / read Mary's book.'

There are intriguing complications, however. While the characterization 'definite agreement' is generally accurate in the sense that it is only definite object noun phrases that trigger the paradigm in (2), the first and second person object pronouns are a bit of a fly in the ointment. If the object is second person (singular or plural) *and* the subject is first person singular, a special agreement form has to be used – the *-lak/-lek* form illustrated in (5). In all other cases in which the object is first or second person, the agreement form to be selected comes from the *indefinite* paradigm in (1). The examples in (6) and (7) serve to illustrate this, for second and third person subjects, respectively.

- (5) a. (*Én*) *szeret-lek* (*téged* / *titeket* / *benneteket*).
 I love-LAK/LEK you_{sg} you_{pl}-ACC you_{pl}-ACC

- b. **(Én) szeret-ek* (*téged / titeket / benneteket*).
 I love-INDEF you_{sg} you_{pl}-ACC you_{pl}-ACC
- c. **(Én) szeret-em* (*téged / titeket / benneteket*).
 I love-DEF you_{sg} you_{pl}-ACC you_{pl}-ACC
- (6) a. *(Te) szeret-sz* (*engem / minket / bennünket*).
 you love-INDEF me us-ACC us-ACC
- b. **(Te) szeret-ed* (*engem / minket / bennünket*).
 you love-DEF me us-ACC us-ACC
- (7) a. *János szeret-Ø* (*engem / minket / bennünket / téged / titeket / benneteket*).
 János love-INDEF me us-ACC us-ACC/ you_{sg}
 you_{pl}-ACC you_{pl}-ACC
- b. **János szeret-i* (*engem / minket / bennünket / téged / titeket / benneteket*).
 János love-DEF me us-ACC us-ACC you_{sg} you_{pl}-ACC
 you_{pl}-ACC

The remarkable thing about Hungarian first and second person objects, then, is that they by and large pattern with indefinite objects. But from a semantic point of view, it hardly makes sense to call them indefinite. The fact that they can be pro-dropped, which is a privilege of definites, casts further doubt on their indefiniteness (cf. Farkas 1990). Besides, they do not behave *exactly* like third person indefinite objects in any event. As Bartos (1997:370, n. 8) points out (crediting the observation to Katalin É. Kiss), first person objects, when selected by a so-called ‘*ikes ige*’ (a verb whose third singular indefinite form ends in *-ik*), trigger an *-ik*-less third person singular form (*esz engem a méreg* ‘eat-3SG me the anger’), not the *-ik* form showing up in the presence of an indefinite object (*eszik valamit* ‘eat-3SG.IK something’). And as seen in (5), second person object pronouns of verbs with a first singular subject conjure up the special *-lak/-lek* form in (5a).

It will be instructive at this early point in the exposition to take a microscopic view of the constitution of this special *-lak/-lek* form (cf. also Bartos 1997:364, n. 2). This form consists of three segments, /l/, a vowel whose quality is dependent (as a reflex of vowel harmony) on the phonological environment, and /k/. We need not concern ourselves with the middle segment, which in all likelihood is just an epenthetic vowel linking the two consonants. What remains, then, is an /l/ and a /k/ – and interestingly, these two consonants both show up on their own in the indefinite agreement paradigm in (1): /k/ as the ending for first person indefinite agreement, and /l/ as one of the two forms of second person indefinite agreement. The possibility presents itself, then, that the *-lak/-lek* form found in (5a) is a composite element combining the first and second person agreement markers, with the

latter this time representing the object rather than the subject (as it does in (1b)). If this is on the right track, the *-lak/-lek* form seen in (5a) is the only inflectional ending of Hungarian which crossreferences both the subject and the object; and the element crossreferencing the second person object turns out to be identical in form to one of the elements crossreferencing subjects of the same person. We will return to the significance of the composite nature of the agreement form featured in (5a).¹

Even though the two paradigms in (1) and (2) are both *subject agreement* paradigms, the fact that the choice between (1) and (2) is conditioned by the definiteness of the object leads us to implicate an Object Agreement projection in the analysis of Hungarian agreement. In the exposition of the analysis, we will refer to this object agreement projection as *vP/AgrOP*, sailing a steady course between Scylla (*i.e.*, Chomsky 1991, 1993) and Charybdis (Chomsky 1995: Ch. 4) – but see Section 4.4 for an argument favoring *v* over AgrO. The head of this projection is responsible for the checking of both structural accusative Case and definiteness in Hungarian. The [+definite] feature of *v/AgrO* is an uninterpretable feature, to be deleted and erased under checking against the object. The indefinite agreement paradigm in (1) is a case of *default* agreement (with respect to definiteness). Our cue to this effect comes from the fact that the paradigm in (1) is used not just when the object is indefinite but also when there is *no* object. (1), then, is truly the 'elsewhere' case, surfacing whenever there is no [+definite] feature on AgrO; definiteness is a so-called *privative* opposition.

We will have much more to say about the technicalities of object agreement and Case-feature checking in Hungarian in the remainder of the paper. But for the moment, this will serve as sufficient background for an investigation of the four construction types which form the subject matter of this paper, to be outlined in the next section.

3. Four 'clause union' constructions

The data which form the basis for the claims enumerated in the introduction can be grouped into four sets (on some of these, see É. Kiss 1987), to be identified by

Table 1.

	(i) PV climbing	(ii) definiteness agr	(iii) person agr
I (<i>fog</i>)	obligatory	obligatory	obligatory
II (<i>jön</i>)	impossible	impossible	optional/variable
III (<i>-tat/-tet</i>)	cannot tell	obligatory	obligatory
IV (<i>hagy</i>)	impossible	obligatory	obligatory; blocked by DAT

the matrix verbs participating in them. Table 1 sums up the four classes of verbs and their properties with respect to the three key parameters of clause union which we will focus on in what follows:

- i. whether or not the preverb (*meg* in the examples below) ‘climbs up’ to the matrix verb
- ii. whether or not the matrix verb agrees in (in)definiteness with the embedded object
- iii. whether or not the matrix verb agrees in person with the embedded object (cf. the special *-lak/-lek* form used in constructions with first person subjects and second person objects; see the b-examples in (10), (13), (16) and (19))

Let us illustrate these four verb classes with the aid of representative examples for each class, starting with the case where everything is obligatory: the class of auxiliary verb constructions, featuring *fog*.

I auxiliary verb constructions (e.g. *fog* ‘will’, *akar* ‘want’²)

- (8) a. **Fogsz* *meqlátogatni valakit.*
will-2SG.INDEF PV-visit-INF someone-ACC
- b. **Fogod* *meqlátogatni valakit.*
will-2SG.DEF PV-visit-INF someone-ACC
- c. *Meg fogsz* *látogatni valakit.*
PV will-2SG.INDEF visit-INF someone-ACC
- d. **Meg fogod* *látogatni valakit.*
PV will-2SG.DEF visit-INF someone-ACC
‘You will visit someone.’
- (9) a. **Fogsz* *meqlátogatni Pétert.*
will-2SG.INDEF PV-visit-INF Péter-ACC
- b. **Fogod* *meqlátogatni Pétert.*
will-2SG.DEF PV-visit-INF Péter-ACC
- c. **Meg fogsz* *látogatni Pétert.*
PV will-2SG.INDEF visit-INF Péter-ACC
- d. *Meg fogod* *látogatni Pétert.*
PV will-2SG.DEF visit-INF Péter-ACC
‘You will visit Peter.’
- (10) a. *Meg fogsz* *látogatni (engem).*
PV will-2SG.INDEF visit-INF me.ACC
- b. *Meg foglak* *látogatni (téged).*
PV will-LAK/LEK visit-INF you.ACC
‘You will visit me.’ / ‘I will visit you.’

II *come/go* verb aspectual constructions (featuring matrix *jön* 'come', *jár* 'go', (*el*)*megy* 'go (off)', *van* 'be'³); also some subject-control constructions (*igyekszik* 'strive', *irtózik* 'abhor', *törekszik* 'endeavour', *vágyik* 'long for', *fél* 'fear', *hozzáfog* 'start', *kényszerül* 'be forced')

- (11) a. *Jöttél* *meglátogatni* *valakit*.
come-PAST-2SG.INDEF PV-visit-INF someone-ACC
b. **Jötted* *meglátogatni* *valakit*.
come-PAST-2SG.DEF PV-visit-INF someone-ACC
c. **Meg jöttél* *látogatni* *valakit*.
PV come-PAST-2SG.INDEF visit-INF someone-ACC
d. **Meg jötted* *látogatni* *valakit*.
PV come-PAST-2SG.DEF visit-INF someone-ACC
'You came to visit someone.'
- (12) a. *Jöttél* *meglátogatni* *Pétert*.
come-PAST-2SG.INDEF PV-visit-INF Péter-ACC
b. **Jötted* *meglátogatni* *Pétert*.
come-PAST-2SG.DEF PV-visit-INF Péter-ACC
c. **Meg jöttél* *látogatni* *Pétert*.
PV come-PAST-2SG.INDEF visit-INF Péter-ACC
d. **Meg jötted* *látogatni* *Pétert*.
PV come-PAST-2SG.DEF visit-INF Péter-ACC
'You came to visit Peter.'
- (13) a. *Jöttél* *meglátogatni* (*engem*).
come-PAST-2SG.INDEF PV-visit-INF me.ACC
b. *Jöttelek* *meglátogatni* (*téged*).
come-PAST-LAK/LEK PV-visit-INF you.ACC
b'. %*Jöttem* *meglátogatni* (*téged*).
come-PAST-1SG PV-visit-INF you.ACC
'You came to visit me.' / 'I came to visit you.'

A few notes are in order here with respect to the data for class II. For most aspectual verbs in class II, the grammaticality of the *-lak/-lek* form is strongly dependent on *tense*: while past-tense (13b) is perfect, present-tense **jölek meglátogatni téged* is completely impossible. For *jár* 'go' this tendency seems slightly weaker; but I hasten to add that for many speakers even the past-tense *-lak/-lek* form for *jár* (as in *Jártalak meglátogatni*) is not very good.⁴

The optionality of the *-lak/-lek* form shown for *jön* in (13b, b') apparently is a matter of native-speaker variation as well: not all speakers seem to like the form in (13b'). Variation also appears to manifest itself here with *igyekszik* type subject-

control verbs: while É. Kiss (1987:228) reports that in contexts like (13b) both *igyekszem* ‘strive-1SG.DEF’ (definite because ‘*ikes igék*’ lack a first person singular indefinite form) and *igyekezlek* ‘strive-LAK/LEK’ are grammatical, some speakers strongly prefer the latter; on the other hand, for *irtózik* the tendency seems to go in the other direction, judging from É. Kiss (1987:228–229, Ex. (42)). É. Kiss calls the agreement behavior of *igyekszik* type verbs “largely idiosyncratic”.⁵

Much more systematic is the agreement behavior of most other subject-control verbs of Hungarian, including *megpróbál* ‘PV-try’, *utál* ‘hate’, *szeret* ‘like’ and *un* ‘find boring’. While sharing with the *igyekszik* set the ban on preverb climbing, they systematically force upstairs person agreement (–*lak/-lek*: *Szeretlek meglátogatni téged* ‘(I) like-LAK/LEK PV-visit you’) and definiteness agreement (*Szeretem/*ek meglátogatni Pétert* ‘(I) like-1SG.DEF/*INDEF PV-visit Peter’). In these respects, these verbs largely pattern together with verbs of classes III and IV, to which we now turn.⁶

III –*tat/-tet* ‘make’ causatives

Class III differs primarily from class II in that agreement in definiteness with the embedded object is obligatorily marked on the causative verb. Person agreement (–*lak/-lek*) is obligatory as well.

- (14) a. Meglátogatattál (Jánossal) valakit.
PV-visit-CAUS-PAST-2SG.INDEF János-INST someone-ACC
b. *Meglátogatattad (Jánossal) valakit.
PV-visit-CAUS-PAST-2SG.DEF János-INST someone-ACC
‘You had someone visited (by János).’
- (15) a. *Meglátogatattál (Jánossal) Pétert.
PV-visit-CAUS-PAST-2SG.INDEF János-INST Péter-ACC
b. Meglátogatattad (Jánossal) Pétert.
PV-visit-CAUS-PAST-2SG.DEF János-INST Péter-ACC
‘You had Péter visited (by János).’
- (16) a. Meglátogatattál (Jánossal) (engem).
PV-visit-CAUS-PAST-2SG.INDEF János-INST me.ACC
b. Meglátogatattalak (Jánossal) (téged).
PV-visit- CAUS-PAST-LAK/LEK János-INST you.ACC
‘You had me visited (by János).’ / ‘I had you visited (by János).’

IV *hagy/enged* 'let' permissive-causatives⁷

Class IV largely patterns with class III, but introduces an interesting split with respect to person agreement conditioned by the presence or absence of a dative-marked 'causee', as seen in (19).

- (17) a. *Hagysz* (Jánosnak) *meglátogatni valakit*.
 let-2SG.INDEF János-DAT PV-visit-INF someone-ACC
 b. **Hagyod* (Jánosnak) *meglátogatni valakit*.
 let-2SG.DEF János-DAT PV-visit-INF someone-ACC
 c. **Meg hagysz* (Jánosnak) *látogatni valakit*.
 PV let-2SG.INDEF János-DAT visit-INF someone-ACC
 d. **Meg hagyod* (Jánosnak) *látogatni valakit*.
 PV let-2SG.DEF János-DAT visit-INF someone-ACC
 'You allow someone to be visited (by János).'
- (18) a. **Hagysz* (Jánosnak) *meglátogatni Pétert*.
 let-2SG.INDEF János-DAT PV-visit-INF Péter-ACC
 b. *Hagyod* (Jánosnak) *meglátogatni Pétert*.
 let-2SG.DEF János-DAT PV-visit-INF Péter-ACC
 c. **Meg hagysz* (Jánosnak) *látogatni Pétert*.
 PV let-2SG.INDEF János-DAT visit-INF Péter-ACC
 d. **Meg hagyod* (Jánosnak) *látogatni Pétert*.
 PV let-2SG.DEF János-DAT visit-INF Péter-ACC
 'You allow Peter to be visited (by János).'
- (19) a. *Hagysz* (*Jánosnak) *meglátogatni (engem)*.
 let-2SG.INDEF János-DAT PV-visit-INF me.ACC
 b. *Hagylak* (*Jánosnak) *meglátogatni (téged)*.
 let-LAK/LEK János-DAT PV-visit-INF you.ACC
 'You let me be visited (by János).' / 'I let you be visited (by János).'

Table 1 testifies to a scale of 'clause union' effects – class I behaves in all respects like a 'clause union' construction in the sense that preverb climbing, definiteness agreement on the upstairs verb and person agreement on the upstairs verb are all featured by it; classes III and IV are 'one notch lower' on the 'clause union' scale (though for class III this is somewhat difficult to tell with any certainty, since we cannot be sure whether or not PV climbing, independently of complex verb formation, has taken place); and class II is lowest on the scale, (optionally) featuring only one 'clause union' effect (person agreement). This confirms what we said at the outset – 'clause union' is not a unitary phenomenon but a sliding scale. In what follows we will analyze this sliding scale on the basis of concrete syntactic analyses of the four classes of 'clause union' constructions in Hungarian.

4. Class IV: *hagy* permissive-causatives

It will be fruitful to start our investigation of the data tabulated above with the permissive/causative *hagy* constructions illustrated in (17)–(19). Of the four batches of facts laid out in Section 3, these present us with the most difficult questions – and ultimately, once these questions are properly understood, with the clearest insight into the problems at hand.

4.1 Preverb placement

Let us begin by discussing the simplest ingredient of the paradigm in (17)–(19): the placement of the resultative-marking preverb *meg*. The facts are that *meg* must be placed right in front of the causativized verb, and cannot ‘climb’ up into the matrix clause and glom onto *hagy*. This is interesting in view of the fact that Hungarian, in other construction types, allows preverbs like *meg* to behave relatively autonomously with respect to the verb which they ‘belong to’. The auxiliary verb construction illustrated in (8) is a case in point: here *meg* effectively must climb up to the auxiliary *fog*. But in the *hagy* constructions in (17) this is impossible: the examples in (17c, d) are bad.

In view of the relative independence of preverbs and their hosts in the grammar of Hungarian, we assume that preverbs are not prefixes base-generated on verbs in the lexicon, but are housed in syntactic projections independent of the verbs in the structure. And in the light of Piñón’s (1995) arguments to the effect that Hungarian preverbs are ‘aspectualizers’ (cf. also É. Kiss 1998), we assume that preverbs like *meg* are harbored by an *aspectual* functional projection (to be labeled AspP), generated in the extended projection of the verb. Thus, we liken the analysis of *meg* to that of the Mandarin Chinese perfectivizer *le* (see den Dikken & Sybesma 1998) and the perfectivizing incarnation of the Spanish clitic *se* (see Hulk & Cornips 1998, also discussed in den Dikken & Sybesma’s work).

- (20) *Juan se comió la manzana.*
 Juan SE ate the apple
 ‘Juan ate the apple up.’

- (21) *Meg* (like Mandarin *le* and Spanish aspectual *se*) is harbored by AspP.

The fact that the preverb must stay low in permissive-causative constructions featuring verbs like *hagy* ‘let’ (cf. (17)) now indicates, from the perspective of the hypothesis in (21), that AspP is generated *low* in the structure of *hagy* constructions – in the complement of the causative verb. We may thus proceed to proposing the following substructure for class IV constructions:

- (22) ... [_{VP} *hagy* [_{AspP} *meg* [_{VP} *látogatni* OB]]]

4.2 Definiteness agreement

With this partial structure in place, we can immediately draw one important conclusion concerning the locus of definiteness agreement checking in Hungarian. Notice that, as (17) and (18) illustrate, it is the *upstairs* verb (*hagy*) which agrees in definiteness with the embedded object of a permissive-causative construction of class IV. Since we had just concluded that AspP finds itself downstairs, below the causative verb, in class IV constructions, we can now conclude that definiteness checking in Hungarian is *not* a function of AspP – otherwise we would expect no definiteness agreement on the finite verb (in fact, since non-finite verbs do not show definiteness agreement, we would expect to find no forms featuring definite agreement morphology at all, contrary to fact). This conclusion vindicates another of the theoretical claims enumerated in Section 1: object agreement is *not* tied to aspect, hence not checked in the domain of an aspectual head.

Rather than linking object agreement to Asp, we introduce a separate *v*/AgrO projection for the checking of the [+definite] feature (recall from Section 2 that the indefinite paradigm is the default case; definiteness is a privative opposition). The *v*P/AgrOP which checks definiteness (and Case) on the object is located, in *hagy* constructions, in the *matrix* functional domain: it is the matrix causative verb which checks definiteness agreement, as is shown by the facts in (17) and (18). This is one respect in which class IV constructions behave as ‘clause union’ constructions – *v*P/AgrOP, checking the definiteness feature of the embedded object, is located in the matrix functional domain, as in (23).

- (23) ... [_{vP/AgrOP} *v*/AgrO_[+acc,+def] [_{VP} *hagy* [_{AspP} *meg* [_{VP} *látogatni* OB]]]]

Objects in Hungarian do not seem to raise to *v*/AgrO’s checking domain in overt syntax. In our examples in (17) and (18), *valakit* and *Pétert*, the NPs whose features check those present under AgrO, do not appear to have moved overtly, surfacing at the right edge of the clause. Of course, it might be the case, *a priori*, that even in examples like (17) and (18), *valakit* and *Pétert* have actually undergone overt-syntactic movement to Spec*v*P/AgrOP, with the material preceding these NPs having raised to positions higher up in the clause. But we believe there is evidence that the object’s definiteness features are *not* checked via overt-syntactic NP-movement but via covert feature-movement instead. The evidence comes from an intriguing difference between definiteness and person feature checking on the part of the embedded object.

4.3 Person agreement

Hungarian permissive-causative constructions of class IV introduce an interesting split between definiteness agreement and what we may call *person* agreement

between the upstairs verb and the embedded object. By ‘person agreement’ we refer to the occurrence of the special *-lak/-lek* form of the inflected verb which is obligatory in constructions with a first person singular subject *and* a second person object (see (5) for initial illustration). As we see in (19b), this *-lak/-lek* form is obligatory in class IV constructions *when there is no dative-marked causee* (i.e., embedded subject): *Hagylak meglátogatni* ‘I let (someone) visit you’. But when there *is* a dative-marked causee present, the construction is ungrammatical – not just with *-lak/-lek* (cf. (19b)), but also in any other variety. There simply is no way of saying ‘I let János visit you’ with an embedded infinitive and a dative-marked causee. There are, of course, ways of getting this proposition across, but Hungarian must in that case resort to the use of a *finite* embedded clause, as in (24c), where the verb shows definite agreement as a function of its taking a finite clause as its complement.⁸

- (24) a. **Hagyok* Jánosnak *meglátogatni* (téged).
 let-1SG.INDEF JÁNOS-DAT PV-VISIT-INF YOU.ACC
 b. **Hagyom* Jánosnak *meglátogatni* (téged).
 let-1SG.DEF JÁNOS-DAT PV-VISIT-INF YOU.ACC
 c. *Hagyom* Jánosnak *hogy meglátogasson* (téged).
 let-1SG.DEF JÁNOS-DAT that PV-VISIT-3SG.INDEF.SUBJUNC YOU.ACC
 ‘I let János visit you.’

What we just pointed out with reference to second person embedded objects by *and* large holds true also of first person objects, as is indicated by the deviance of (19a), and confirmed by the fact that (24a, b) have no grammatical counterparts with *engem* ‘me’ replacing *téged* ‘you’ either.

How do we account for the fact that when there is a dative-marked causee present, there is no way of having an infinitival clause with a first or second person object below *hagy*? This question factors out into three subquestions, each concerned with a different member of the triplet constituted by (19b), (24a) and (24b) (and their counterparts with *engem*). Let us address each in turn, starting from the back.

Accounting for the deviance of (24b) is simple. We have already argued that *vP/Agrop* (the projection in where definiteness is checked) finds itself in the extended projection of *hagy* ‘let’ in class IV constructions (cf. (23)). So *hagy* could agree in definiteness either with its propositional complement (the infinitival clause) or with the object thereof; but in neither case is the [+definite] feature checkable – we know that first and second person objects behave like indefinites in triggering the selection of the paradigm in (1); and we know independently that infinitival clauses, unlike finite clauses, do not trigger definite agreement either:⁹

- (25) *Próbálkozol/*od* [*meglátogatni Pétert*].
 try-2SG.INDEF/*DEF PV-visit-INF Péter-ACC
 'You are trying to visit Peter.'

There is no way, then, for *hagyom* in (24b) to ever check its [+definite] object agreement feature. Since that feature is uninterpretable, Full Interpretation is therefore violated in (24b).

Its variant with indefinite agreement, given in (24a), needs a little more work. Indefinite morphology here could only be the reflex of agreement between *hagyok* and its infinitival complement. We know from (25) that infinitival clausal complements trigger indefinite agreement. But such is impossible in class IV constructions. Suppose that the infinitival complement of *hagy* does indeed check the features of *v/AgrO*. That will trap *téged*, the embedded verb's object. With the single *v/AgrO* in the structure checking its features against the infinitive, *téged* has nowhere to go to check its Case feature. This may not be devastating, if *téged* does not need to bear a Case feature (cf. Section 10.6, below). But we will soon outline an analysis of first and second person object pronouns in Hungarian according to which they involve a clitic; and the technicalities of clitic movement will make it impossible for that clitic to reach its designated landing-site (the matrix Infl) if the infinitive checks *v/AgrO*'s features in (24a). We need not tarry on these technicalities in the present context, though, since there is good reason to surmise that *hagy*'s infinitival complement *cannot* in fact check the features of *v/AgrO* at all, due to its reduced structure. While *próbálkozik* takes a fully clausal complement, (23) identifies the complement of *hagy* as a 'bare' AspP, lacking the requisite features.

Ultimately, then, the problem with (24a) is that the features of *v/AgrO* will be trapped: they can be checked neither by the complement of *hagy* nor by the embedded object (the latter for reasons to be discussed presently). The result is a fatal violation of Full Interpretation.

Now we are back to square one: the construction which started our discussion of 'person agreement', (19b). Why is it that the *-lak/-lek* form also fails, whenever there is a dative-marked causee present? The answer must lie in the fact that the second person object is unable to make its way up into the checking domain of the matrix *v/AgrO* to get its uninterpretable features checked, and to check the uninterpretable features of *v/AgrO*, whenever there is a dative-marked causee present. Notice that, in both preceding sentences, we added a qualification in the form of a 'whenever' clause: for as soon as the dative-marked causee is dropped, the *-lak/-lek* form is fine, and the sentence is grammatical. So apparently, the embedded object's ability to make its way up into the matrix clause is related to the presence/absence of an overt causee with dative Case.

The blocking effect of an overt causee on upstairs *-lak/-lek* agreement can be interpreted as a straightforward reflex of Rizzi's (1990) Relativized Minimality (or

its minimalist successor, the Minimal Link Condition of Chomsky 1995), if two conditions are met:

- The embedded object establishes a person agreement (-*lak/-lek*) relation with the matrix verb by undergoing *A-movement* into the matrix functional domain, across the causee.
- The causee occupies an *A-specifier* position intervening between the extraction and landing-sites of the embedded object – a specifier position which, moreover, cannot be rendered ‘equidistant’ from the landing-site of the embedded object.

That the dative-marked causee does indeed find itself in a position of the required sort is suggested by the fact that the dative causee in a *hagy* permissive-causative can bind an anaphoric embedded object, as in (26):

- (26) *Hagytam Jánosnak dicsérni magát.*
 let-PAST-1SG János-DAT praise himself-ACC
 'I let János praise himself.'

Anaphors must be bound; and binding requires a syntactic c-command relationship between the binder and the bindee. From the grammaticality of (26), we may hence conclude that the dative-marked causee *Jánosnak* c-commands the embedded object. Such will be guaranteed only if *Jánosnak* occupies an A-specifier position structurally intervening between the embedded object and the matrix functional domain. Execution is straightforward, though we will refrain from making any specific assumptions here so as to avoid committing ourselves at this point in the discussion to the exact location of *Jánosnak*.¹⁰ This issue is tangential to our concerns at this time, and we can leave it open for the moment since whichever tack we take, there will be no way of rendering this specifier position and the landing-site of an A-moved embedded object equidistant from this NP's extraction site. Two options present themselves: either (i) XP is an extended projection of the embedded infinitive (so that the dative effectively occupies the subject position of the embedded infinitival), or (ii) XP is a small clause containing the dative phrase and the projection of the causativized verb as its subconstituents. Either way, XP will be the complement of V, and raising X to V will not serve to make the dative-marked and the landing-site of matrix-bound A-movement applied to the embedded object equidistant from the embedded object's extraction position.

- (27) *_{[YP embedded object_i ... [_{XP} Jánosnak ... [_{VP} V *t_i]]]*}
- A-spec A-spec
- └── not equidistant ─┘

The binding facts in (26) thus lead us to conclude that there is a c-command relationship between the dative causee and the embedded object in a Hungarian *hagy* permissive-causative, which confirms that the second of the two conditions on a successful RM/MLC based account of (19b) is met.¹¹ We can now complete the account of (19) along RM/MLC lines (as in (27)) by meeting the first condition as well – that is, by arguing that there is overt-syntactic NP-movement involved in the derivation of Hungarian constructions with first and second person objects.

But it seems very unlikely that the overt object pronoun (*engem, téged*) is the element undergoing overt-syntactic NP-movement into a position relatively high up in the matrix clause (cf. the location of *vP/AgrOP* in (23)) – not just because they do not *seem* to have raised so high, but also, and more significantly, because it can be argued that object noun phrases in general do not undergo overt NP-movement in Hungarian. That they do not follows from the foregoing discussion, which thus allows us to return to the issue that came up at the end of the previous subsection.

If the objects in (17) and (18) underwent overt-syntactic movement, this would be a case of NP-movement into *SpecvP/AgrOP*, which is an A-position. But we have just set up an argument, on the basis of (19), to the effect that NP-movement across the dative-marked causee of class IV constructions is illegitimate. Hence we would predict to find a blocking effect on the embedded object's definiteness checking imposed by an overt dative-marked causee – but we do *not* find such an effect: (17) and (18) are fine both with and without *Jánosnak*. In the light of the foregoing, then, this is evidence that Case and definiteness checking in Hungarian involves *covert feature movement*.

This means that the definiteness and Case features of *v/AgrO* are *weak* in Hungarian. And that, in turn, means that no object will be triggered to raise to *SpecvP/AgrOP* in overt syntax in this language. So we can be reasonably confident that the physical first and second person pronouns in (19) do not themselves undergo overt-syntactic NP-movement. But now we seem to have worked ourselves into a paradox: we have interpreted the blocking effect of *Jánosnak* in (19) as evidence for overt NP-movement, but we have just found out that the pronouns themselves do not seem to undergo such movement. Two questions hence pose themselves at this point: what *is* undergoing overt-syntactic NP-movement in the course of the derivation of the constructions in (19), and *why* does that movement obtain?

The answer to the latter question must be that there are reasons *extraneous* to definiteness and Case which force overt-syntactic movement in the case of first and second person objects. And those reasons, we believe, are the same that force overt-syntactic movement in the case of *clitic pronouns* in languages like Romance:

- (28) a. *Ho visto Gianni.*
 have-1sg seen Gianni
 ‘I have seen Gianni.’
 b. *L’ho visto.*
 him-have-1sg seen
 ‘I have seen him.’

Concretely, we propose that Hungarian first and second person objects involve a *clitic*, and that, like their counterparts in the Romance languages, the clitic part of Hungarian first/second person objects has to cliticize onto an Infl-node in the course of the overt-syntactic derivation.¹² More specifically, in Hungarian object clitic movement is a two-step process: (i) first, the entire maximal projection of the clitic undergoes NP-movement to the SpecvP/AgrOP position local to the Infl-node targeted by cliticization; and (ii) subsequently, the head of the NP head-moves and left-adjoins to Infl.¹³

- (29) Hungarian object clitic movement involves:
 (i) NP-movement to the SpecvP/AgrOP local to the target Infl-node, and
 (ii) head-movement of the clitic into a position left-adjoined to Infl.

The reasons why we resort to this two-step derivation are twofold: first, it allows us to preserve the Head Movement Constraint (the clitic, by first pied-piping its projection to the local SpecvP/AgrOP, does not skip any ‘harmful’ head positions when adjoining to Infl), and secondly, it gives us the desired explanation for the ban on first and second person objects in class IV constructions in the presence of a dative-marked causee. The NP-movement step will be responsible for the ‘dative effect’: NP-movement to SpecAgrOP will be blocked by the MLC whenever the SpecXP position in a structure *à la* (27) is occupied by a dative-marked causee.

4.4 ‘Passive infinitives’ and the v/AgrO debate

This essentially completes our analysis of class IV constructions with *hagy*. But before closing this discussion and proceeding to an investigation of the properties of Hungarian object clitics (to which Section 4.3 gives rise), we would like to examine the variants of (19a, b) lacking the dative-marked causee. What we know about this construction is that, unlike its counterpart with an overt causee, it allows overt-syntactic NP-movement from out of the infinitival constituent. But what we do not know quite yet is what the structure of the complement of *hagy* is in this kind of case. We actually turn out to have all the necessary tools in hand to force a conclusion on this question, a conclusion which also sheds light on the question of whether (definiteness and) accusative Case is checked in the domain of AgrO or, instead, in that of a ‘light verb’ *v* (*à la* Chomsky 1995: Ch. 4).

The grammaticality of (19) without *Jánosnak* must mean, in the light of the foregoing, that either (i) there is no SpecXP position obstructing NP-movement into the matrix functional domain, or (ii) the SpecXP position is used as an escape hatch for NP-movement. Suppose the latter is correct. Then we expect that the embedded object will, at some point in the derivation, come to behave as a 'derived causee' with respect to the embedded verb, in virtue of passing through SpecXP, the position otherwise harboring the causee. So concretely, we then expect (19a, b) without *Jánosnak* to behave like constructions with a first or second person causee when it comes to formal properties of the infinitive – in particular, agreement. Infinitives in Hungarian *hagy* + dative constructions are obligatorily inflected for person and number when their subject is a first or second person (null) pronoun, as seen in (30):

- (30) a. *Hagyta* (nekem) meglátogatnom Pétert.
 let-PAST-3SG.DEF me-DAT PV-visit-INF-1SG Péter-ACC
 b. *Hagyta* (neked) meglátogatnod Pétert.
 let-PAST-3SG.DEF you-DAT PV-visit-INF-2SG Péter-ACC
 'He let me / you visit Peter.'

Arguably, agreement in (30) is a formal reflex of the relationship between the element in SpecXP and the infinitival causativized verb. Precise details need not concern us here;¹⁴ the important thing is that no agreement surfaces on the infinitive in (19a, b) without *Jánosnak* – examples like **Hagysz meglátogatnom engem* or **Hagylak meglátogatnod téged* are totally unacceptable. This suggests that the object, on its way into the matrix functional domain, does *not* stop over in SpecXP. This conclusion is significant, for it makes an analysis of constructions of the type in (19) without *Jánosnak* involving a 'passive infinitive' (an infinitival clause internal to which NP-raising to subject has taken place) untenable (see also Petter 1998 for arguments against a 'passive infinitive' analysis of Dutch constructions of this type).

So we are left with option (i): there is no SpecXP position obstructing NP-movement. This also turns out to be a strong conclusion. For not only is there no overt occupant of this position, the position must effectively be absent altogether: if it were there and contained a null category of sorts (*pro* or *PRO*), NP-movement would still be blocked, for the same reasons that it is blocked when there is an overt occupant of SpecXP. In sum, the causee is *radically absent* from the variants of the (19a, b) which do not feature *Jánosnak*.

This, we believe, is an important result, not obtainable in such a strong form on the basis of non-Hungarian evidence. The bottom line is that constructions like 'They had the car repair' (meaning what English *They had the car repaired* means) in languages like Hungarian (and also Romance and Germanic, with the

exception of English) do not involve infinitival passivization, nor do they feature a structurally represented *pro*_(arb) causee. And this, in turn, leads us to draw some broader theoretical conclusions with respect to the representation of external arguments and Case-checking functional heads, an issue we will briefly comment on in closing this section.

The lie of the land is as follows. We would like there to be obstruction to NP-movement of the embedded object into the matrix functional domain when there is a dative-marked causee present, and, conversely, we want there to be no such obstruction when the dative-marked causee is absent. Moreover, we would like the accusative Case-checking potential of the embedded object to vanish when the matrix verb is passivized (as in Italian constructions like *La macchina è stata fatta riparare* ‘the car has been made repair’; cf. Guasti 1993). The latter we can accomplish by making the embedded object Case-dependent on the matrix causative verb. And this we gave formal shape by generating the accusative Case-checking head in the matrix functional domain. If that accusative Case-checking head is *v*, Chomsky’s ‘light verb’, and if there is exactly one such head present in the structure of *faire à* causatives, we expect there to be precisely one external argument represented in the structure of *faire à* causatives – since *v* introduces not just the accusative Case feature but also the external θ -role, any complex structure with a single instantiation of *v* will have a single accusative Case feature *and* a single external argument. The embedded verb, then, will not be associated to an external argument of its own; it is essentially a middle verb in the sense of den Dikken and Sybesma (1998), projecting a root VP without an accompanying *v*P. As a consequence of there being no external argument represented in the causative verb’s complement, there will be no need to ever postulate a PRO/*pro* subject inside the infinitival constituent – in fact, postulating such a null category will be impossible (since there is no θ -role available for it).

This is a step in the desired direction. For now we know that, in the absence of a dative-marked causee, there certainly will not be a null subject represented inside the causativized constituent. So this eliminates one potential blocker of NP-movement of the embedded object. The dative-marked causee, whenever present, will not find itself inside the causativized verb phrase; instead, it will be a constituent of the matrix clause: an indirect object of the ‘cause’ type verb, which, viewed this way, belongs in the class of triadic verbs.¹⁵ Triadic verbs can often be used dyadically as well – cf. *give*: *I will give Sue a book / a book to Sue* and *I will give a book*. There is no particular reason to assume that, when used dyadically, verbs like *give* structurally project an indirect object; instead, it is customarily assumed that, when *give* type verbs are used dyadically, the beneficiary argument is radically absent from the syntactic representation. With ‘cause’ type verbs participating in *faire à* constructions analyzed as triadic verbs, we can now take the final step necessary to get the behavior of (19) fully under control: the dative-marked causee,

when present, is the indirect object of the causative verb;¹⁶ and when there is no dative-marked causee, the causative verb is simply used dyadically, the causee being radically absent from the syntactic representation (though it will still be present in the lexical-conceptual and perhaps even the argument-structure representation of the causative construction). This said, there will indeed be no obstruction to NP-movement of the embedded object into the matrix functional domain in *faire à* constructions lacking a dative-marked causee.

We initiated the preceding train of thought with the assumption that the head responsible for checking accusative Case in the matrix functional domain of *faire à* causatives is *v*, Chomsky's (1995: Ch. 4) 'light verb' which introduces, apart from the accusative Case feature, also the external argument. Suppose now that the accusative-checking head were AgrO rather than *v*. Then there would be no *a priori* reason to expect the causativized VP to necessarily lack an external argument – after all, AgrO is not the introducer of an external θ -role; the two are entirely independent of one another. It should be possible, therefore, to represent the dative-marked causee as the external argument of the causativized VP on an approach which localizes the accusative-checking property in AgrO rather than *v*. On such an analysis (on which XP in (27) is an extended projection of the causativized verb), the blocking effect of dative-marked causees is still guaranteed. But the disappearance of blockage in the absence of an overt dative-marked causee is not – after all, if indeed the dative-marked causee were the external argument of the causativized verb, and if we are right in claiming that the causee-less construction does not involve infinitival passivization, there must be a null external argument present in the structure of *faire à* constructions with null causees; and that null subject would be expected to block NP-movement of the embedded object in the same way that the overt embedded subject does.

Our point here is not that an analysis which locates the accusative-checking property in AgrO *necessarily* leads to an analysis which treats the dative-marked causee as the subject of the causativized verb. Rather, our point is that such an analysis would make an approach along these lines a real possibility. And since that would leave us empty-handed with respect to the analysis of (19), that should be avoided. Localizing the accusative-checking potential in a 'light verb' *v*, by contrast, has the desired effect of making the unwanted representation radically impossible – with *faire à* causatives featuring precisely one *v*P, there will be precisely one accusative Case feature available (which is desirable in view of Italian 'long passives' like *La macchina è stata fatta riparare* 'the car has been made repair') and there will be exactly one external argument: the *matrix* external argument. The causee is a matrix indirect object, structurally present only when physically present.

All in all, then, the behavior of causee-less *faire à* causatives can be construed as an argument in favor of Chomsky's (1995: Ch. 4) proposal to 'replace' AgrOP

with a ‘light verb’ projection νP , with ν responsible for the checking of accusative Case and the introduction of the external argument.

4.5 Summary

Now we really digested the class IV construction to the full. The main properties of *hagy* permissive-causatives of class IV can be summarized as in (31):

- (31) a. AspP is downstairs.
 b. νP /AgrOP is upstairs (‘clause union’).
 c. Clitic climbing is obligatory (‘clause union’) but obstructed by a dative causee.

It is high time now to broaden the discussion and to address what is perhaps the most remarkable result of the discussion in this section: the claim that Hungarian has object clitics. This claim gives rise to a variety of questions and consequences which we will discuss in the next section.

5. On Hungarian object clitics

5.1 Person split and the representation of first and second person pronoun phrases

If we are right that the facts of *hagy* constructions of class IV are evidence for the clitic-hood of first and second person objects in Hungarian, the very same batch of facts also shows that third person (null) pronominal objects are *not* clitics in Hungarian. After all, (32) is grammatical, with and without the overt object pronoun and, crucially, with and without the overt dative-marked causee. So apparently we have a person split in the domain of object clitics in Hungarian: first and second person objects involve a clitic structure, third person objects never do.¹⁷

- (32) *Hagyod* (Jánosnak) meglátogatni (őt).
 let-2SG.DEF JÁNOS-DAT PV-VISIT-INF him-ACC
 ‘You allow him to be visited (by János).’

If this split stood perfectly on its own, there would be little merit in our analysis. But there are interesting ways in which this split does not in fact stand on its own. For one thing, a person split in which first and second person pattern together to the exclusion of third person is familiar from ‘split ergative’ systems (something we will not dwell on any further here). And for another, there is an important formal

difference between first and second person object pronouns and their third person counterparts. A brief look at the paradigm in (34) should make this clear.

(33) HUNGARIAN NOMINATIVE PRONOUNS

- a. *én* 'I'
- b. *te* 'you_{sg}'
- c. *ő* '(s)he'
- d. *mi* 'we'
- e. *ti* 'you_{pl}'
- f. *ők* 'they'

(34) HUNGARIAN ACCUSATIVE PRONOUNS

- a. *engem*^(%et) 'me(ACC)'
- b. *téged*^(%et) 'you_{sg}(ACC)'
- c. *őt* '(s)he-ACC'
- d. *mink*^(%et) 'us(ACC)'
- d'. *bennünk*^(%et) 'us(ACC)'
- e. *titek*^(%et) 'you_{pl}(ACC)'
- e'. *bennetek*^(%et) 'you_{pl}(ACC)'
- f. *őket* 'they-ACC'

The third person pronominal system is perfectly transparent, and built on the nominative singular pronoun *ő* – the accusative singular is formed by attaching the accusative marker *-t* onto the base form; the plural is made by glomming the plural marker *-k* onto the base form; and the accusative plural features both plural *-k* and accusative *-t*, in that order. The forms for first and second person seem much less transparent: the accusative forms certainly do not result from just sticking the accusative marker *-t* onto the nominative forms (cf. *én* – **ént*, *te* – **tét*). In fact, the accusative marker does not even seem to be important in the first and second person object pronouns at all – certainly for the singular pronouns *engem* and *téged*, the forms lacking the accusative marker are much more natural; for the first/second person plural pronouns the standard language does require the accusative marker, but dialects seem to be able to do without the *-et* in these cases as well.

The optionality of the accusative Case-marker in *engem/téged* (and, in dialectal Hungarian, in their plural counterparts as well) reminds us of a regularity found elsewhere in the grammar of Hungarian: possessed noun phrases with a first or second person possessor typically lack the accusative Case-marker when functioning as a direct object:

- (35) a. *Megkaptam az útlevelem(et).*
 PV-got-1SG.DEF the passport-1SG(ACC)
 'I got my passport.'

- b. *Megkaptad az útleveled(et).*
 PV-got-2SG.DEF the passport-2SG(ACC)
 'You got your passport.'
- c. *Megkaptuk az útlevelünk(et).*
 PV-got-1PL.DEF the passport-1PL(ACC)
 'We got our passports.'
- d. *Megkaptátok az útleveletek(et).*
 PV-got-2PL.DEF the passport-2PL(ACC)
 'You got your passports.'

This suggests a parallel between possessed nominals and first/second person object pronouns. And that parallel goes much further – in fact, the first/second person object pronouns look *exactly* like possessed noun phrases: a comparison of the forms in (34a, b, d, e) and the corresponding forms of *útlevel* 'passport' in (35) will make this clear.¹⁸ Abstracting away from the accusative Case-ending, the first/second person object pronouns all end in the possessive agreement marker of the pertinent person and number – that is, *engem* ends in the *-em* found on possessed nouns with a first person singular possessor; the *-nk* of *minket* is the same element as the *-ünk* of *útlevelünk* in (35c); etc.

Formally, then, the full forms of the Hungarian first and second person objects in (34a, b, d, e) are possessed nominals, with the full pronoun serving as the morphological host to the possessive morphology – possessive morphology which has the exact same person and number features as the pronoun itself: when the pronoun is first plural *mi*, the possessive morpheme is first plural *-nk*; when the pronoun is second plural *ti*, the possessive morpheme is second plural *-tek*; etc. Possessive morphology occurs in Hungarian only in the presence of a possessor. So we know, given that possessive morphology shows up on all first/second person accusative pronouns, that there has to be a possessor present in the structure of these pronouns. That possessor could either be the overt pronoun itself, in which case the possessum would – in any event in the case of first person pronouns – be null (and the possessive morphology would, irregularly, be hosted by the possessor since they end up adjacent due to the emptiness of the possessum); or the (first person) possessor will be null and the overt pronoun functions as the possessum, bearing possessive morphology in the usual way. The latter approach is somewhat more straightforward in the sense that it provides a concrete host for the possessive morpheme. And for the purposes of the discussion to follow this approach also works out rather better than the alternative (see also n. 20, below, for a potential additional argument against the former approach). So we adopt it here, and assume that the overt first/second person object pronouns are possessed nouns, possessed by elements with the same person and number features as the overt pronoun (the possessum). Those elements will be the *clitics* which undergo movement

into the matrix clause.¹⁹ The first person clitic is null; the second person clitic can be overt (-*l*).

- (36) a. [NP* CL_[1sg] en<g>+em]
 b. [NP* CL_[2sg] té<g>+ed]
 c. [NP* CL_[1pl] mi+nk]
 d. [NP* CL_[2pl] ti+tek]

Third person pronouns do not work this way in Hungarian – as pointed out in the foregoing, third person pronoun forms are all built on the nominative singular base form *ő* via the addition of plural and accusative Case-markers; there is no possessive morphology on the accusative forms in (34).²⁰ So third person pronouns have a substantially simpler structure: they are simply a projection of the pronoun; there is no clitic in the possessor position.

Just on the basis of this formal distinction between the first/second person object pronouns in (34a, b, d, e) and their third person counterparts, then, we naturally arrive at a conclusion we had drawn in the discussion in Section 4: that first/second person object pronouns involve a *clitic* while third person pronouns do not. And we have also arrived at an interesting way of putting both that clitic and the overt pronoun into a single noun-phrase structure: the clitic is the possessor of the overt pronoun, which is adorned with possessive morphology.

It is interesting to draw a parallel between this representation and the so-called object clitic doubling constructions of Romance, exemplified by Spanish (37a/a'):

- (37) a. *Lo vimos a él.*
 him(CL) saw-1PL to him
 'We saw him.'
 a'. *Yo tengo asma, pero él asma no me tiene a mí.*
 I have asthma, but the asthma not me(CL) has to me
 'I have asthma, but asthma doesn't have *me*.'
 b. [NP* {*me/te/lo/la*} a {*mí/tí/el/ella*}]

What is interesting is that in Spanish object clitic doubling constructions the full noun phrase must be preceded by the dative preposition *a*. And we know that the dative preposition occurs inside possessed nominal phrases in Romance (cf. French *voiture à Jean* 'car to Jean'). A possibility that presents itself, then, when it comes to the representation of object clitic doubling constructions in Romance is that the object clitic and its double form a single possessed noun phrase, much as in Hungarian (cf. (37b)), this time with the object clitic as the possessum and the full pronoun as the possessor (cf. option 1 for Hungarian, which we have not quite discarded, though the alternative, as depicted in (36), works more straightforwardly). Schmitt (1998) comes fairly close to this type of representation of the object clitic

doubling construction (see Section 5.2 for some more discussion of her proposal), though she does not draw the link with possessed noun phrases. What the Hungarian facts canvassed in the above suggest is that, if these Hungarian cases involve object clitic doubling, there is indeed a link between the structure of object clitic doubling constructions and possessed noun phrases, a link that is very much worth looking into in more detail in future research.

What now remains is to add a brief word about the internal make-up of the alternate first/second person plural forms in (34d', e'), *bennünket* and *benneteket*. Their structure has the locative adposition *ben* 'in' at its core, followed by an inflectional marker for first/second person plural (identical with the possessive markers for these person/number combinations, as is generally the case for prepositional inflection in Hungarian) and the accusative Case-marker. The historical development of these forms sheds light on this remarkable composition. In older varieties of Hungarian locative *ben* had a function as a partitivity marker: *Látsz bennünk* '(lit.) you see in us' could mean 'you see some of us' (modern Hungarian *Látsz néhányat közülünk* 'you see some among us'). In those early days, *bennünk* was not adorned with the accusative marker; the actual direct object was a null indefinite pronoun (cf. 'some' in the translation). But in later times *bennünk* (and the same goes for *bennetek*), when following verbs not otherwise taking *ben*-PPs as their complements, came to carry the accusative Case-marker, functioning as a regular direct object. It seems to be the case, though, that *bennünket* and *benneteket* still behave as complex syntactic constituents headed by a null indefinite pronoun. This is suggested by their agreement behavior in object positions, to which we now turn.

5.2 Definiteness, Case and first/second person objects

As we noted in Section 2, first and second objects in Hungarian trigger indefinite agreement on the finite verb, as shown in (7), repeated here:

- (7) a. *János szeret-Ø* (*engem / minket / bennünket / téged / titeket / benneteket*).
 János love-INDEF me us-ACC us-ACC you_{sg} you_{pl}-ACC
 you_{pl}-ACC
- b. **János szeret-i* (*engem / minket / bennünket / téged / titeket / benneteket*).
 János love-DEF me us-ACC us-ACC you_{sg} you_{pl}-ACC
 you_{pl}-ACC

It has been tentatively suggested in the literature (cf. Bartos 1997:382, 1998; É. Kiss 2000) that this agreement pattern is the reflex of the fact that the structure of first and second person objects is smaller than DP – NumP, according to Bartos and É.

Kiss. This seems entirely reasonable for the *ben*-forms of the first and second person plural pronouns, which historically go back to partitive noun phrases headed by a null indefinite pronoun. We therefore follow the Bartos/É. Kiss line on *ben-nünket* and *benneteket* in its essentials, dressing it up by treating these pronouns as partitive noun phrases headed by a null indefinite (the null counterpart of *some*).

But for the other first and second person object pronouns (*engem*, *téged*, *min-
ket*, *titeket*), there does not seem to be any independent support for an approach along these lines. And we already pointed out in Section 2 that neither semantically nor syntactically do first and second person objects pattern with indefinite noun phrases. So we will present an alternative analysis that will face the challenge that the variants of (7b) featuring *engem*, *téged*, *minket* and *titeket* pose: the fact that the first/second person object pronoun does *not* check definiteness against the verb, while it *does* manage to get its accusative Case feature checked. This looks like a paradox – after all, accusative Case and definiteness are checked in the domain of one and the same head, *v*/AgrO. But the possessive approach to the structure of these first and second person objects outlined in the foregoing provides a way out of this paradox. The crux of the solution is the realization that, of the two members of the structure in (36), only one is specified for definiteness, and only one is specified for Case.

Starting with the latter, all we need to draw attention to is the morphological fact that the accusative Case-marker manifests itself on the possessum (which it linearly follows) but *not* on the clitic. We can ascertain this by looking at constructions with a first person singular subject and a second person object, where the special *-lak/-lek* inflectional marker surfaces (cf. (5a), repeated here).

- (5) a. (Én) szeret-lek (téged / titeket / benneteket).
 I love-LAK/LEK you_{sg} you_{pl}-ACC you_{pl}-ACC

In Section 2 we already drew attention to the compositionality of the *-lak/-lek* form: it consists of one of the forms for second person subject inflection and the form for first person subject inflection, both from the indefinite paradigm. We proposed to give the *-l* and the *-k* of the *-lak/-lek* marker independent status, such that *-l* actually functions as a second person *object clitic* in (5c). Now notice that the *-l* of *szeretlek* and the *-l* of unergative *mosolyogtál* 'you smiled' or unaccusative *megjöttél* 'you have come' are identical in form – that is, there is no formal distinction between object clitics and what we may now take to be subject clitics (the *-l* in the latter two forms): *-l* is invariant, regardless of whether its function is that of subject or object. This suggests that object clitics in Hungarian indeed do not carry an accusative Case-feature – and this makes perfect sense if the object clitic is structurally represented as the (nominative) possessor of the structurally Case-marked object pronoun.²¹

There is good reason, then, to believe that, of the two members of the DP-structure in (36), the possessum has a structural accusative Case-feature while the possessor (the clitic) does not. Now what about definiteness? To answer this question, let us take Schmitt's (1998) lead and say that in clitic doubling constructions (of which we take (36) to be an instantiation; cf. Section 5.1) the relationship between the clitic and the doubling (pro)noun phrase is akin to that between an expletive and its associate. From clauses involving an expletive and a nominal associate we are familiar with the fact that the latter must be indefinite (cf. English *There is a/*the man in the garden*). Let us take this to show the nominal associate of an expletive cannot be marked [+definite]; and with [+definite] being a feature of D, this will naturally entail that the associate of an expletive is smaller than DP. For sentential expletive constructions this has the familiar consequences (see Chomsky 1995 for a specific development of the indefiniteness requirement on the 'expletive adjunction' approach). For clitic doubling constructions, the same line of argument leads us to conclude that in (36) it is the clitic which is marked [+definite] while the full pronoun is not so marked.²²

- (36') a. [NP* CL_[1sg] *en*<g>+em]
 [+def] [+acc]
 b. [NP* CL_[2sg] *té*<g>+ed]
 [+def] [+acc]
 c. [NP* CL_[1pl] *mi*+nk]
 [+def] [+acc]
 d. [NP* CL_[2pl] *ti*+tek]
 [+def] [+acc]

A [+definite] D is an operator head, and as such needs to bind a variable. In the bulk of cases this variable is created via N-to-D raising (i.e., via the creation of a *chain*) in the course of the derivation (cf. Longobardi 1994). But in clitic doubling configurations of the type portrayed in (36'), the [+definite] D-head of the clitic (an expletive on Schmitt's 1998 proposal) associates to the requisite variable via the formation of a *CHAIN* (in Chomsky's 1986 sense). The net result in both cases is the saturation of the [+definite] feature of the D-head. In the 'normal' case, D is the head of the entire noun phrase; but in (36') the [+definite] D-head is not: [+definite] is represented *only* on the clitic, not on the NP*. This conclusion is an important step towards the solution of the mystery of Case and definiteness checking in Hungarian constructions with first/second person objects.

Before proceeding, it will be good to briefly recapitulate the crucial ingredients of the analysis of *hagy* permissive-causative constructions in Section 4. Recall that the fact that *hagy* constructions feature obligatory agreement in definiteness between the finite verb and a third person embedded object regardless of the presence

of a dative-marked causee (cf. (17)/(18)) led us to conclude that the [+definite] feature of v/AgrO is *weak*. Recall also that the presence of a dative-marked causee does block the *-lak/-lek* form of the finite verb (in terms of the analysis proposed, blocks clitic climbing from out of the causativized constituent) prompted an analysis of Hungarian clitic placement in terms of a two-step derivation: NP-movement to the $\text{SpecvP}/\text{AgrOP}$ position local to the target Infl-node followed by actual cliticization.

In concrete terms (in keeping with the general adage that movement should affect the smallest constituent necessary for convergence), the element that undergoes NP-movement (feeding cliticization) is *just* the projection of the object clitic (the possessor in (36')). Suppose, then, that by so moving, the clitic destroys the possibility of checking the definiteness feature of v/AgrO . The result will then be default indefinite agreement on the finite verb whenever there is overt-syntactic movement of the object to $\text{SpecvP}/\text{AgrOP}$. This is the desired result; let us make it more precise.

In particular, let us make a specific assumption with respect to the nature of weak features, as a companion to Chomsky's (1995: Ch. 4) assumption about strong features in (38):

- (38) Strong features are features which a derivation cannot tolerate.
(Chomsky 1995)
- (39) Weak features are features which can only be checked within X^0 .
(this paper)

Given (39), weak features can never 'accidentally' be checked by overt-syntactic XP-movement. This has the desired effect of making it impossible for the raised object itself to check definiteness agreement against the matrix v/AgrO in Hungarian sentences in which the object is first or second person. Moreover, it is a standard assumption that NP-movement, if it leaves copies at all, does not allow lower copies to be 'active' after Spell-Out. That is, only the highest member of an A-chain survives at LF. It also will be impossible, therefore, to check v/AgrO 's [+definite] feature in the case of first/second person objects by launching the matching feature from one of the clitic's lower copies at LF – those copies, if present at all, are inert at LF. Finally, since in a clitic doubling structure of the type in (36') the complex NP^* has no [+definite] feature at all (definiteness being represented on the clitic only; cf. above), it cannot 'come to the rescue' either. There will be no way, then, for the object to enter into a definiteness agreement relationship with v/AgrO in Hungarian if the object is first or second person: the [+definite] feature of v/AgrO , which is weak and uninterpretable, would fail to get checked, causing a violation of Full Interpretation. The result, as said, is *default* indefinite agreement on the finite verb: v/AgrO has no [+definite] feature, and the inherent [+definite] feature of the

first/second person object clitic is interpretable on the clitic, hence is not in need of checking at all.

This takes care of definiteness agreement in the case of first/second person objects. What about Case? Recall that we had concluded on the basis of the fact that on the clitic itself we cannot discern any Case-marking and that instead it is the full pronoun that hosts Case-morphology, i.e. that it is the projection of the possessum that is Case-marked (as is a standard assumption for possessed noun phrases). So the clitic does not have an accusative Case feature; to the extent that it ever had a Case feature, it will already have checked and lost this feature prior to its movement from out of the complex DP in (36). The clitic therefore cannot check the Case feature of *v/AgrO* – not even ‘accidentally’ (in violation of (39)), since it simply does not have a Case feature (any more). But in contrast to the situation we faced in the case of definiteness checking, there *is* a way this time of getting *v/AgrO*’s accusative Case feature checked. After all, the projection of the possessum (the non-clitic object pronoun) bears accusative Case. So it can launch its features up to *v/AgrO* and get its accusative Case feature checked against that of *v/AgrO*, Full Interpretation being fully satisfied as a result.

So we see that an additional virtue of the representation of object pronouns as in (36)/(36’), above and beyond the fact that it provides a direct explanation for the morphological realization of these pronouns in Hungarian (and opens up a new perspective on the representation of clitic doubling in Romance as well), is that it eliminates the paradox with respect to Case and definiteness checking that Hungarian first/second objects seemed to present us with. The paradox evaporates once we recognize that, in the structure in (36’), it is the possessum’s projection that harbors the Case feature while the possessor (the clitic) carries the [+definite] feature of first/second person object pronouns.²³

5.3 Order

One last remark concerning Hungarian object clitic constructions is in order, concerning order. If indeed the *-l* of (5a) is a clitic, and if indeed it adjoins to the left of Infl (like object clitics in Romance; cf. Kayne’s work), we immediately capture the relative order of the constituent parts of the *-lak/-lek* form in (5a) (*szeretlek* ‘I love you’). The *-k* of first person singular subject agreement is either a subject clitic (see the discussion at the end of Section 5.2) or a direct morphological realization of the [1sg] feature bundle under finite Infl – Hungarian inflectional morphology is concatenative, and gives occasion to a non-lexicalist approach (as argued in den Dikken 1999 with reference to the Hungarian possessive agreement system). So the *-k* of *szeretlek* sits in Infl. The *-l* of *szeretlek* is the physical realization of an object clitic – it adjoins to Infl, as we claimed in the foregoing. In keeping with Kayne’s

(1991, 1994) strictly left-adjoining approach to clitic placement, we have it adjoin to the left of Infl, ending up preceding whatever is in Infl (i.c. *-k*). The surface word order *-lek* (with the *-e-* being an epenthetic vowel; Hungarian has no *-lk* clusters) thus results without further ado. And moreover, *-l* and *-k* end up forming a unit under Infl; more generally, the object clitic and the subject clitic/agreement marker form a unit under Infl (resulting from adjunction of the former to the latter), and this may ultimately help us make sense of the difficult co-occurrence restrictions on these markers (cf. Kayne 1994 for a suggestion along similar lines with respect to the analysis of co-occurrence restrictions on multiple clitics in French; cf. also the *le > se* switch in double-object clitic constructions in Spanish).

6. Class III: *-tat/-tet* causatives

The discussion of *hagy* permissive-causatives of class IV basically provides us with everything we need to know to proceed to a discussion of the remaining three classes. We will go through them in reverse order, building on the analysis of class IV.

For class III, the morphological causatives featuring *-tat/-tet* 'make/have', we observe that base verb plus preverb linearly precedes the affixal causative verb *-tat/-tet*. It is difficult to tell what this means with respect to the question of whether 'preverb climbing' takes place in this construction or not. Since the causative verbal complex is arguably the result of *incorporation* of the lower verb into the affixal causative verb, the Aspect phrase harboring preverb may either be base-generated low, in the complement of the causative verb, in which case the incorporating base verb will raise up to *-tat/-tet* via Asp, picking up *meg* along the way, or Asp may be base-generated in the matrix clause, in which case *meg* directly precedes the verbal complex in the base.

There are ways of forcing a decision on this question. One would be to capitalize on the fact that *meg* precedes the entire complex verb: on an antisymmetry approach to adjunction, the only way for the lower verb to 'pick up' *meg* on its way up would be for it to left-adjoin to *meg*, which would not deliver the appropriate surface word order. Another would be to argue that *meg* occupies SpecAspP rather than Asp⁰. And a third would be to capitalize on Li's (1990) theory of 'improper head movement', preventing the lower verb from raising through any functional head on its way up to the causativizer. The net result of all three would be that *meg*'s AspP would have to be base-generated in the extended projection of the causativizer. We will keep the door to low generation of AspP ajar, however; nothing hinges on its location here.

We can be more categorical when it comes to the structural position occupied by the causee and by ν P/AgrOP in *-tat/-tet* causatives. Let us start off with the latter. The empirical facts in (14) and (15) show that the complex causative verb agrees in definiteness with the embedded object, just like in *hagy* permissive-causatives of class IV. Moreover, the agreement marker is affixed to *-tat/-tet*, not to the embedded verb with which *-tat/-tet* forms a unit. The morphological constitution of the verb form in (15b) hence shows that ν P/AgrOP finds itself in the matrix functional domain. The definiteness feature of ν /AgrO is once again weak, checked by LF feature movement.

When we now turn to the structural location of the causee, let us first of all recall from the discussion of *hagy* permissives of class IV that the mere presence of an overt dative-marked causee makes it impossible for the embedded infinitive to take a first or second person object – in technical terms, the dative-marked causee obstructs cliticization of the first/second person object. In the domain of morphological *-tat/-tet* causatives of class III, on the other hand, we do not find any such obstruction by the causee: (16) is grammatical regardless. There appears to be a correlation here between the case-form of the causee and the possibility of object cliticization: in class IV the causee is dative-marked; in class III it is instrumental-marked. Instrumentally case-marked noun phrases typically occupy non-argument (A'-)positions in the structure. On the assumption that the instrumental-marked causee in class III morphological causatives is no exception in this regard, the fact that its presence is innocuous with respect to the cliticization of first/second person embedded objects is as expected.

In sum, what we have seen in our discussion of class III is the following scenario:

- (40) a. AspP's location is unclear (theory-internal issue).
- b. ν P/AgrOP is upstairs ('clause union').
- c. Clitic climbing is obligatory ('clause union') and unobstructed by an INST causee.

7. Class II: *come/go* constructions

The *come/go* constructions of class II present a more intriguing picture than do the *-tat/-tet* causatives of class III. Not with respect to the location of AspP – the fact that the preverb must stay downstairs makes it clear that AspP is generated in the complement of the *come/go* verb. More intriguing is the agreement cocktail served up by class II constructions: the *come/go* verb can agree in person with the object

clitic (cf. the *-lak/-lek* form in (13b)), but it does not agree in definiteness with the object.

It will be good, right at the outset, to discourage any kind of 'functionalist' outlook on the fact that definite agreement on the *come/go* verb is impossible in class II constructions. One might think that this is impossible simply because *come/go* verbs cannot be transitive – but such an approach would never cover the entire spectrum of facts. After all, *jár* 'go' is a member of the set of verbs which partake in class II constructions,²⁴ and unlike *jön* 'come' and *elmegy* 'go off' it does actually allow transitive construal. And when it is construed transitively and takes a definite object, as in (41), it actually shows definite agreement with the object (unsurprisingly). It is not structurally impossible for *jár*, therefore, to take definite agreement. Yet, when it occurs in the type II *come/go* construction, it behaves just like its fellow *come/go* verbs in rejecting definiteness agreement with the embedded object, as (42) shows.

- (41) *Járom az utat.*
 go-1SG.DEF the road-ACC
 'I walk the road.'
- (42) *Járom/*om meglátogatni Pétert.*
 go-1SG.INDEF/*DEF PV-visit-INF Peter-ACC
 'I regularly go to visit Peter.'

It is something specific to the class II *come/go* constructions, then, that makes upstairs definiteness agreement impossible.

That 'something specific' is the location of $\nu P/\text{AgrOP}$ *vis-à-vis* the matrix *come/go* verb. While in constructions of classes III and IV we have found evidence to believe that $\nu P/\text{AgrOP}$ is located in the matrix functional domain, $\nu P/\text{AgrOP}$ finds itself in the *complement* of the matrix verb in *come/go* constructions in Hungarian. As a consequence, no [+definite] agreement morphology will ever manifest itself on the matrix verb in these constructions – the embedded object checks definiteness against an embedded ν/AgrO ; but since definiteness agreement has a morphological reflex only in the domain of finite verbs, definiteness checking is invisible in the examples in (11) and (12).

Recall that in class II constructions AspP patterns with $\nu P/\text{AgrOP}$ when it comes to its location in relation to the matrix verb – it finds itself in the complement of the *come/go* verb as well, as the placement of the preverb *meg* in our examples in (11) and (12) shows. With respect to $\nu P/\text{AgrOP}$ and AspP placement, then, class II constructions are not 'clause union' constructions at all. Still, these constructions do exhibit one 'clause union' feature, albeit only optionally for some speakers (see above): what we have called 'person agreement' between the upstairs verb and the embedded object (the *-lak/-lek* form of (13b)). On our

approach to this so-called ‘person agreement’, this is the reflex of unobstructed overt-syntactic cliticization of the embedded first/second person object clitic to the matrix Infl-node, an effect of the presence of only a single IP in the structure. *Come/go* constructions, then, can do without an IP in the infinitival complement, and when they lack an embedded IP, clitic climbing is automatic, yielding (13b). But speakers accepting (13b’), lacking *-lak/-lek*, do not force clitic climbing, which, on our assumptions, amounts to saying that they allow an IP to be present in *come/go*’s complement. Hungarian *come/go* constructions split into two subcases, therefore: one corresponding to English *come/go fetch the newspaper* (no embedded IP) and the other matching English *come/go to fetch the newspaper* (where *to* in English and the absence of *-lak/-lek* in Hungarian (13b’) signals the presence of an embedded IP).

The picture for class II that emerges from this discussion is the following:

- (43) a. AspP is downstairs.
- b. ν P/AgrOP is downstairs.
- c. Clitic climbing is possible (‘clause union’) and unobstructed.

8. Class I: Auxiliary constructions

The last class on our list is class I, featuring auxiliary verbs like *fog*. These show the full array of ‘clause union’ effects:

- (44) a. AspP is upstairs (‘clause union’).
- b. ν P/AgrOP is upstairs (‘clause union’).
- c. Clitic climbing is obligatory (‘clause union’) and unobstructed.

The upstairs location of AspP reveals itself in obligatory ‘preverb climbing’ – *meg* must surface to the left of *fog* in (8) and (9), it cannot show up downstairs.²⁵ Our analysis of *meg*, which treats it as the earmark of AspP, thus leads us to place AspP in the extended projection of the auxiliary in class II constructions. That ν P/AgrOP is also upstairs can be read off the fact that *fog* must agree in definiteness with the object whenever the object is third person (cf. (8) vs. (9)). And finally the occurrence of the *-lak/-lek* form in (10) shows that clitic climbing is obligatory, another hallmark of ‘clause union’.

Concerning the behavior of class I verbs in first language acquisition, there is some interesting data available in the literature.²⁶ Papp (1998:269–270) points out that, even though ‘[t]here is one instance of a raised prefix in Zoli’s production at age 1;8 and one in Andi’s files at 2;1’, preverb climbing from out of the complement of *akar* is often omitted by Hungarian L1 learners – cf. *Én is akarom megnézni* ‘I

too want-1SG.DEF PV-look.at' (Gyuri, 2;3) and *Én is akarok fölszállni* 'I too want-1SG.INDEF PV-climb' (Éva, 2;7).²⁷ This indicates that one 'clause union' property of class I verbs is not stably in place before the age of three. But notice that definiteness agreement in the two examples just given is entirely as expected on the basis of the adult grammar of class I verbs: in Gyuri's utterance *akar* bears definite agreement in keeping with the fact that the embedded verb *megnézni* takes a (pro-dropped) definite direct object here ('I want to watch it, too'), while Éva correctly selects indefinite agreement in recognition of the fact that *fölszállni* is intransitive. So apparently 'clause union' effects with respect to definiteness agreement and preverb climbing do not develop at the same time – a clear indication that even with verbs of class I, which are positively specified for all three 'clause union' earmarks in Table 1, the three 'clause union' parameters are independent of one another.

9. 'Clause union'

The child language data reported at the end of the previous section confirm the 'modular' approach to 'clause union' effects taken in this paper. 'Clause union' is a sliding scale, defined by three separate parameters: (i) preverb climbing, (ii) definiteness agreement and (iii) person agreement. The auxiliary verb constructions of class I are at the top of the scale. These are full-fledged 'clause union' constructions – that is to say, they locate both AspP and *vP/AgrOP* in the matrix functional domain, and they also feature obligatory clitic climbing. The causatives of classes III and IV are one notch lower on the 'clause union' scale: they have *vP/AgrOP* upstairs and they have obligatory clitic climbing, but they feature AspP in the complement of the matrix verb (though this cannot be concluded with certainty for the *-tat/-tet* cases of class III; depending on one's point of view, there might actually be arguments to the effect that AspP is located upstairs in these cases). Lowest on the 'clause union' ladder are the *come/go* constructions of class II. These do have obligatory clitic climbing, but in the other two respects they fail the litmus test for 'clause union': they have both AspP and *vP/AgrOP* located downstairs.

'Clause union' effects can now be factored out into three factors:

- (45) a. the location of AspP
- b. the location of *vP/AgrOP*
- c. the presence/absence of IP in the embedded clause

Whenever AspP is located 'upstairs' we get 'preverb climbing', i.e., the occurrence on the matrix verb of the preverb that belongs to the embedded verb. Whenever *vP/AgrOP* is located 'upstairs' we get upstairs definiteness agreement with the embedded definite object. And whenever there is no IP in the complement of the

matrix verb *and* there is no A-specifier blocking clitic movement, we get ‘clitic climbing’ effects. Class I constructions have the full array of (45a–c) while class II constructions only feature clitic climbing (i.e., they have no downstairs IP); class IV has (45b, c) but not (45a), and depending on one’s analysis class III is either like class IV or like class I.

An important regularity that presents itself when we inspect the patterns observed is that AspP is never located upstairs without ν P/AgrOP also being in the matrix functional domain. In observational terms: ‘preverb climbing’ and upstairs definiteness agreement always go together; it does not seem to be possible to have ‘preverb climbing’ (upstairs AspP) without at the same time having definiteness agreement between the matrix verb and the embedded object. This suggests that there is a close structural relationship between AspP and the projection in which accusative Case and definiteness are checked, and (on the ν P approach) by which the external θ -role is introduced as well. Such an interplay between the two projections would seem to fit in most comfortably with Chomsky’s (1995: Ch. 4) ‘light verb’ ν perspective on the latter: an interdependence between Asp and the ‘light verb’. This would square with the line of thought presented at the end of Section 4 of the present paper, to the effect that ν should be preferred to AgrO.

10. Long A’-movement, agreement and Case

‘Clause union’ effects are typically confined to infinitival complementation constructions across languages. And at first blush Hungarian seems to pose no exceptions to this generalization: it is impossible to have the embedded subject or object agree in definiteness with the upstairs verb in an example such as (46); it is impossible to have a second person subject or object of the embedded finite clause trigger the *-lak/-lek* form on the matrix verb, as in (47); and it is also impossible to have the preverb *meg* ‘climb’ into the matrix clause in an example such as (48) (see n. 28, below, for some qualifications which do not, however, affect the discussion to follow).

- (46) a. *Akarom/*ok hogy valaki meglátogassa*
 want-1SG.DEF/*INDEF that someone PV-visit-SUBJUNC-3SG.DEF
 Jánost.
 János-ACC
 ‘I want someone to visit János.’

- b. *Akarom/*ok* *hogy János meglátogatasson*
 want-1SG.DEF/*INDEF that János PV-visit-SUBJUNC-3SG.INDEF
valakit.
 S.O.-ACC
 'I want János to visit someone.'
- (47) a. *Akarom/*lak* *hogy te meglátogasd*
 want-1SG.DEF/*LAK/LEK that you PV-visit-SUBJUNC-2SG.DEF
Jánost.
 János-ACC
 'I want you to visit János.'
- b. *Akarom/*lak* *hogy János meglátogatasson*
 want-1SG.DEF/*LAK/LEK that János PV-visit-SUBJUNC-3SG.INDEF
téged.
 you.ACC
 'I want János to visit you.'
- (48) <*<Meg> akartam *hogy János*
 PV want-PAST-1SG.(IN)DEF that János
 <*<meg>látogasson *engem*²⁸
 PV-visit-SUBJUNC-3SG.INDEF me.ACC
 'I wanted János to visit me.'

But there are contexts in Hungarian in which a constituent of the embedded clause triggers definiteness/person agreement on the matrix verb, and will show up in the accusative Case-form regardless of its function in the embedded clause. Those contexts involve A'-extraction from out of the embedded clause, affecting *wh*-phrases and focused constituents.²⁹ The most spectacular examples of this type involve extraction of the embedded *subject*, for these exhibit not just upstairs agreement but 'Case switch' as well. Exemplification is provided below.

- (49) *Kit/*ki* *akarsz/*od* *hogy meglátogassa*
 who-ACC/*who want-2SG.INDEF/*DEF that PV-visit-SUBJUNC-3SG.DEF
Jánost?
 János-ACC
 'Who do you want to visit János?'
- (50) *TÉGED akarlak* *hogy meglátogass* *engem.*
 you-FOC want-LAK/LEK that PV-visit-SUBJUNC-2SG.INDEF me
 'It is you that I want to visit me.'

Upstairs definiteness/person agreement and 'Case switch' are obligatory in contexts such as these. But they become impossible in cases of multiple *wh*-extraction from out of the embedded clause, as Lipták (2001) shows: (51) with accusative

Case-marking on *ki* and upstairs definiteness agreement is very awkward (on the intended reading of the example, on which *mikor* ‘when’ temporally modifies the embedded clause, i.e. the time of visiting János).

- (51) *Ki/*kit mikor akarod/*sz hogy*
 who/*who-ACC when want-2SG.DEF/*INDEF that
meglátogassa Jánost?
 PV-visit-SUBJUNC-3SG.DEF J-ACC
 ‘Who do you want to visit János when?’

The data in (49)–(51) present a complex array of facts. In this section we will present an analysis of these data based on the analysis of ‘clause union’ phenomena offered in the foregoing, and taking the structure of the second person object pronoun *téged* proposed in Section 5 as its crucial cue.

10.1 Extraction from the embedded clause

One thing that we need to establish before proceeding any further is that in examples of the type in (49) and (50) we are dealing with extraction of the *wh*-constituent or focused phrase from out of the embedded clause. While this may seem to go without saying, an *a priori* alternative analysis would treat these constituents as matrix elements, as in English constructions such as *I think of John that he is stupid*. There is evidence within Hungarian that the latter is not the right approach to the facts in (49)–(50) – evidence constituted, in fact, by the contrast between (49) and (51).³⁰

Lipták (2001) offers an analysis of this contrast whose crucial claim is that in (51) extraction proceeds from the embedded clause via the formation of a complex *wh*-constituent containing both *wh*-phrases. That is, *ki* and *mikor* ‘join forces’ in the embedded SpecCP in (51), moving on into the matrix clause as one unit. This approach to (51) explains the impossibility of upstairs agreement and ‘Case switch’ for *ki*, on the plausible assumption that the Case and definiteness features of neither of the members of the *wh*-complex can percolate up to the *wh*-complex. The *wh*-complex, then, has no Case or definiteness features, which makes it impossible for this complex to be attracted by the upstairs checker of these features, *v/AgrO*. Instead of attracting the *wh*-complex, *v/AgrO* checks its features against the entire embedded CP, resulting in definite agreement, as usual in Hungarian.

The ease with which Lipták’s analysis handles the contrast between (49) and (51) suggests that it is on the right track. And if it is, it constitutes a direct argument to the effect that the *wh*-phrases in (51) *both* come from out of the embedded clause – for otherwise they could not have formed a *wh*-complex in the embedded SpecCP; the matrix SpecFocP would then be the first position in which they

could team up, but that position is too high in the structure to make it impossible for the embedded subject-*wh* phrase to check Case and definiteness against the matrix *v*/AgrO.

We conclude, then, that constructions of the type in (49)–(51) involve long movement, i.e. extraction from out of the embedded clause. With this conclusion drawn, let us proceed to examining the upstairs Case and agreement checking phenomena exhibited by (49) and (50).

10.2 The accusative-marked subject is accusative from the start

Just looking at an example such as (49), a tempting move would be to say that *kit* ‘starts out’ as *ki*, the nominative-checking subject of the embedded clause, and gets adorned with the accusative marker *-t* once it transits through the upstairs Spec ν P/SpecAgrOP position. Such an approach would raise questions about the way in which the Case feature of the matrix *v*/AgrO node are checked, and would seem to imply that a single noun phrase can possess multiple (even non-identical) Case features. But we need not tarry on such questions, since (50) shows that an analysis of this sort cannot be correct.

Recall from Section 5 that the structure of *téged*, the second person object pronoun, is entirely different from that of *te*, its nominative counterpart: the former features a possessed noun phrase structure while the latter does not. Importantly, then, *téged* is not the result of glomming the accusative marker *-t* onto the nominative base form *te* – and in this respect the first/second person pronouns of Hungarian are crucially different from third person noun phrases in the language. In view of this, we cannot claim that (50) ‘starts out’ with *te* in the embedded subject position, with subsequent movement of the focused second person pronoun through the matrix Spec ν P/AgrOP position, resulting in the addition of the accusative marker. If such were actually the case, we would expect (50) to surface with *TÉT rather than TÉGED.

Since *téged* cannot be compositionally ‘created’ in the course of the A’-movement derivation in an example such as (50), we are left with the conclusion that the surface accusative is *always* an accusative, from the very beginning, in such constructions. And since the focused constituent of (50) starts out in the embedded clause (not in the matrix), this means that the external argument of the embedded predication (base-generated in Spec ν P/VP) is *téged*, not *te*.

10.3 *That*-trace avoidance, the Italian way

Since *téged* does not have a nominative Case feature, it never moves to or through the embedded SpecIP position. If such movement were to accidentally take place,

it would arguably destroy the possibility for I's nominative Case feature to ever be checked, which would result in a violation of the Principle of Full Interpretation. The derivation would crash.

There is a second reason, in fact, why the derivation would crash if the embedded subject were to raise from its base position into SpecCP via an intermediate touch-down in SpecIP. The step from SpecIP into SpecCP across the overt finite complementizer *hogy* 'that' would create a classic *that-t* configuration, which we know many languages do not tolerate. On the assumption that Hungarian is one of those languages, movement from SpecIP to SpecCP across *hogy* will be impossible for trace-licensing reasons as well.

Instead of raising up via SpecIP, *téged* makes its way straight from its base position into the embedded SpecCP. In this respect, Hungarian behaves just like Italian (cf. Rizzi 1982): subject extraction across a lexical complementizer is legitimate thanks to the possibility of 'by-passing' SpecIP. As Rizzi argues (cf. also Brandi & Cordin's 1989 supporting evidence from Northern Italian dialects), the SpecIP position gets 'plugged' in derivations of this type by a null category, *pro*. It is *pro* which checks the D-features of Infl, including nominative Case. This gives us a partial derivation of (50) as in (52). For Hungarian (and in this respect Hungarian is different from the Northern Italian dialects discussed by Brandi and Cordin) we need to assume that the *pro* in SpecIP in (52) agrees in phi-features with the embedded subject – after all, the embedded verb agrees in phi-features with the embedded subject, even though it does not directly check its features against that noun phrase.³¹

(52) ... [_{CP} [_{CL}_[2sg] *téged*]_i [*hogy* [_{IP} *pro* [_I [_{v/VP} *t_i* ...]]]]]

10.4 Clitic and feature movement from SpecCP

Once (52) is reached, the following things need to happen:

- (53) a. The complex *téged* phrase needs to check its focus feature against the matrix Foc-head.
- b. The clitic part needs to NP-move to Spec_{vP}/AgrOP and to subsequently cliticize to I.
- c. The Case feature of *téged* needs to undergo LF feature movement to *v*/AgrO.

Of these, the first two take place in overt syntax. The cycle (Chomsky's 1993 'extension condition') demands that (53b) take the lead. Movement of the clitic part of the complex constituent in SpecCP in (52) into the matrix Spec_{vP}/AgrOP position is unproblematic. Notice that we need to assume in any event that the clitic

possessor of the second person object pronoun *téged* is free to vacate its position within the complex noun phrase via NP-movement – otherwise everything said in Section 5 would collapse. This presumably means that the clitic occupies an A-position within the complex noun phrase, and can exit without stopping by in any A' escape hatch along the way.³² 'Improper movement' is thereby avoided: the clitic itself does not raise from out of an A'-position into an A-position. The NP-movement step taken by the clitic (cf. (53b)) thus converges; and subsequent cliticization to I is entirely straightforward. The result of this part of the derivation will be the *-lak/-lek* form of the matrix verb – one of the ingredients of (50) that we needed to account for.

With (53b) executed as sketched, (53a) then follows suit. What raises to SpecFocP is the *remnant* left by overt extraction of the clitic part of the constituent in SpecCP in (52). This being a case of A'-movement, it is unobstructed by any A-position in the matrix clause. Like other instances of A'-movement, focus movement as in (53a) leaves a *copy* of the moved constituent behind in SpecCP.

This copy in SpecCP contains *téged*'s accusative Case feature, which can straightforwardly be launched up to *v/AgrO* at LF, via feature movement. Even though *téged* itself is the head of the constituent sitting in SpecCP, its feature bundle is not sitting in an A'-position, hence 'improper movement' is once again averted: feature movement is never 'improper'.

LF movement of the formal features of the copy in SpecCP takes place in the derivation of (49) as well. And just as in the case of (50), the result will be that the matrix *v/AgrO* checks its accusative Case feature against that of the A'-moved embedded subject. The occurrence of the accusative-marked form *kit* in (49) is thereby accounted for as well. And the indefinite agreement form of the verb is the reflex of the fact that the feature bundle attracted by *v/AgrO* (that of *kit*) has no [+definite] marking for the definiteness feature – default indefinite agreement is the result.

10.5 Attraction and economy

With the analysis of (49) and (50) now in place, an interesting question arises: why is it that 'Case/definiteness switch' phenomena are *obligatory* under long A'-extraction in Hungarian? Why, in other words, *must* *v/AgrO* attract the formal features of the constituent in SpecCP, rather than attracting the formal features of the embedded complementizer? We know that verbs taking a finite CP complement can otherwise attract the formal features of the complementizer: when there is no A'-extraction involved, the matrix verb shows definite agreement, with the embedded CP (cf. (46)–(47)). So why doesn't it do so in (49) and (50) as well?

The answer, we believe, lies in *economy* conditions – in particular, in the idea that v/AgrO will attract that feature bundle which matches its own which is structurally closest to it. When we consider the structure in (52) and consider which of the relevant feature bundles is structurally closer to v/AgrO , those of the constituent in SpecCP or those of the complementizer, the answer must be that it is the former that qualifies as such. A simple node count will deliver the desired result: SpecCP is dominated by fewer nodes than C, so SpecCP is closer to v/AgrO than C. Thus, v/AgrO will attract SpecCP's feature bundle whenever possible. In (49) and (50) it has no trouble doing so; and the result is 'Case/definiteness switch'.

But in (51) it is impossible for v/AgrO to attract the features of the constituent in SpecCP. The reason is that, as discussed in Section 10.1 (cf. Lipták 2001 for the source of this proposal), the constituent in SpecCP in this example is the *wh*-complex formed jointly by the two *wh*-phrases, and the only feature present on this *wh*-complex (as a result of percolation) is the *wh*-feature; the Case and agreement features do not percolate, and therefore are unattractable. To get its features checked, v/AgrO will then have no other option than to settle on the feature bundle of the embedded complementizer. And since the embedded complementizer *hogy* is marked [+definite],³³ the result is definite agreement on the finite verb in (51) – exactly as in the extractionless examples in (46) and (47).

Notice that 'settling on the formal features of C' is automatic in the case of (51): the economy metric never comes into play because there is precisely one way in which v/AgrO can get its features checked in this example – once again, exactly as in (46)–(47). In (49) and (50), by contrast, there are two potential candidates for checking v/AgrO 's features: the constituent in SpecCP and C. And it is here that economy conditions assert themselves as an arbiter, picking the closer of the two as the actual attractee.

10.6 The Inverse Case Filter

We now have the facts in (46)–(51) under control, but there is one question left to be addressed concerning the multiple extraction case in (51). It is directly observable that in this example the subject-*wh* does not check the matrix v/AgrO 's features: *ki* is nominative, and the matrix verb is definite-marked. And in view of the discussion in Section 10.3, we must also conclude that *ki* has not checked any features against the embedded Infl-node either: after all, if movement from SpecIP to SpecCP across *hogy* causes a *that-t* effect in (49)–(50), then the same must be true for (51). All this does not cause any trouble for the matrix v/AgrO and the embedded Infl: these check their features against C and the *pro* in the embedded SpecIP, respectively. But it does raise an interesting question for *ki* itself – if *ki* does not check its features against either v/AgrO or I, then what about its Case feature?

The answer to this question is straightforward: since *ki* never ends up in the checking domain of a Case-feature checker, *ki*'s Case feature will violate the Principle of Full Interpretation. And since (51) is not actually ungrammatical, a conclusion that we tie up immediately to the one just drawn is that *ki* in this example *does not have a Case feature*. The nominative form of *ki* must be the *default* form.

The analysis of (51) expounded here thus leads us to conclude that noun phrases have no need, *per se*, to be adorned with a Case feature. In the bulk of cases they *will* be so adorned, because it is them that check the uninterpretable Case feature of some non-substantive head (*v*/AgrO, I, or some Case-checking head in PP, DP etc.). But they will *need* to have a Case feature only if that is the way in which the non-substantive heads' Case features can be (most economically) checked. This leaves predicative noun phrases completely free to be Case-featureless (since they are never called upon to check a non-substantive head's Case feature: their subject does so). And it also allows *ki* in (51) to be devoid of a Case feature. After all, even if it did have a Case feature, that feature would not percolate up to the *wh*-complex in SpecCP of which *ki* is a part in (51); so if *ki* had a Case feature it would never be attractable/checkable. In contexts such as this, Full Interpretation then effectively makes it impossible for a noun phrase to have a Case feature.

Sometimes, then, argumental noun phrases pattern with predicate nominals in having no structural Case feature. The Case Filter (or the Visibility Condition, in which it is commonly taken to be rooted), which decrees that argumental noun phrases must have Case (features), therefore cannot be correct. Instead, we need what Bošković (1997) has called the Inverse Case Filter: the uninterpretable Case features of *non-substantive* heads (*v*/AgrO, Infl, and their counterparts in PP, DP etc.) must be checked, in the most economical way whenever there is a choice. The Inverse Case Filter of course fits in much more neatly within the overall perspective of the minimalist program, with its emphasis on the needs and demands of non-substantive categories, and its lessened attention to θ -roles (casting doubt on the θ -based Visibility Condition). The discussion of Hungarian (51) has shown that this perspective is empirically superior to the classic Case Filter/Visibility Condition approach.³⁴

10.7 Some consequences

In closing, we add a few brief remarks on some consequences of the analysis of 'clause union' effects in long A'-movement constructions offered in the preceding subsections.

Let us start out by going back to the examples in (46)–(48):

- (46) a. *Akarom/*ok* *hogy valaki meglátogassa*
 want-1SG.DEF/*INDEF that someone PV-visit-SUBJUNC-3SG.DEF
Jánost.
János-ACC
 ‘I want someone to visit János.’
- b. *Akarom/*ok* *hogy János meglátogatasson*
 want-1SG.DEF/*INDEF that János PV-visit-SUBJUNC-3SG.INDEF
valakit.
s.o.-ACC
 ‘I want János to visit someone.’
- (47) a. *Akarom/*lak* *hogy te meglátogasd*
 want-1SG.DEF/*LAK/LEK that you PV-visit-SUBJUNC-2SG.DEF
Jánost.
János-ACC
 ‘I want you to visit János.’
- b. *Akarom/*lak* *hogy János meglátogatasson*
 want-1SG.DEF/*LAK/LEK that János PV-visit-SUBJUNC-3SG.INDEF
téged.
you.ACC
 ‘I want János to visit you.’
- (48) <*<Meg> akartam *hogy János*
 PV want-PAST-1SG.(IN)DEF that János
 <*<meg>látogasson *engem.*
 PV-visit-SUBJUNC-3SG.INDEF me.ACC
 ‘I wanted János to visit me.’

In the last of these examples, the preverb belonging to the embedded verb has attempted to ‘climb’ up into the matrix clause, without success. The reason why ‘preverb climbing’ fails will be straightforward now: base-generation in the matrix functional domain of the AspP whose head checks the embedded VP’s aspectual features will be impossible since the embedded verb will never manage to reach the Asp-head, the complementizer *hogy* being in the way (at the very least).

In general, what we can say is that constituents of an embedded finite clause will be able to check features upstairs only if they ever get ‘close enough’ to the non-substantive heads in the matrix functional domain to be attractable by them. Since *wh*-phrases and focused constituents transit through the embedded SpecCP, they create themselves the possibility of being so attracted. But in (46)–(47) there is no way for the features of the noun phrases in the embedded finite clause to ever be closer to *v/AgrO* than the features of the complementizer. ‘Case/agreement switch’

phenomena will therefore be contingent on A'-movement through SpecCP – a generalization that fits the empirical facts like a glove.

But 'Case/agreement switch' will not ensue just whenever there is A'-movement through SpecCP. We know that not all languages are like Hungarian. There are *two* factors which further restrict the distribution of 'switch phenomena':

- (54) a. *that-t* avoidance by skipping SpecIP
- b. weak D-features in *v*/AgrO

Hungarian meets both (54a) and (54b) – the perfect cocktail for 'switch phenomena'. Since the embedded subject never checks a Case feature against the embedded Infl, its Case feature is available for checking upstairs; and since *v*/AgrO's D-features are checked via LF feature movement, no 'improper movement' is incurred when *v*/AgrO attracts the formal features of the constituent in SpecCP: feature movement is never 'improper'.

The combination of (54a) and (54b) is the only one which caters for 'switch phenomena'. If (54a) is not met, the subject will raise to SpecIP and check its Case feature there, making 'Case switch' impossible; and if (54b) is not met, the constituent in SpecCP will perform 'improper movement' when raising to the matrix Spec*v*P/AgrOP – movement from an A-position (the base position of the embedded subject) via an A'-position (SpecCP) back into an A-position (Spec*v*P/AgrOP). So we may now generalize that languages that feature 'switch' phenomena will feature both (54a) and (54b), and that in all other languages either one or both of the conditions in (54) fails to be met.

In a language like Italian, in which the subject escapes from an embedded finite clause with a lexical complementizer in the same way as in Hungarian (cf. Rizzi 1982: movement from out of a VP-internal position straight into SpecIP), (54a) holds true. Yet 'switch phenomena' do not seem to occur in this language – for instance, in a clitic left dislocation construction the clitic is unable to 'climb' out of an embedded finite clause. We surmise, in the light of the previous discussion, that the non-occurrence of 'switch phenomena' in Italian is a consequence of the fact that the D-features of *v*/AgrO are strong in this language (cf. (54b)).

English presents an interesting case. Though in standard English (55b) is ungrammatical, only (55a) coming out right, there are (British) varieties of English in which (55b) is produced (cf. Jespersen 1965).

- (55) a. *Who shall I say is calling?*
- b. %*Whom shall I say is calling?*

The example in (55b) exhibits a 'Case switch' which seems similar in nature to the one found in Hungarian. If it really is parallel, the logic of the discussion so far leads us to look for the difference between standard English and varieties in which

(55b) is good in the domain of the strength of the D-features of v/AgrO (given that the two types of English do not seem to differ with respect to *that*-trace effects; this actually raises a question, from the perspective of (54a), which we leave aside here).

In particular, from our perspective the variation with respect to (55b) suggests a relation with the well-known speaker variation concerning the acceptability of (56):

(56) %*I believe John sincerely to have lied.*

Postal (1974) features examples of this sort, in which *sincerely* is a matrix manner adverb preceded by the ECM subject of the embedded clause, and judges them as acceptable. But sentences like (56) are not accepted uniformly; cf. e.g. Johnson (1991). There is speaker variation, then, in the domain of the acceptability of (56) – and this speaker variation presumably centres on the strength of the D-features of v/AgrO : weak in varieties in which (56) is bad, but strong for speakers who accept (56) and hence apply overt Object Shift to the ECM subject (cf. Bošković 1997 for relevant discussion).

If we are right in suspecting a connection between the variation in the domain of (55b) and that in (56) and in analyzing the facts in the way we have sketched, the precise relation we expect is that speakers who accept (55b) (hence must have *weak* D-features on v/AgrO to meet (54b)) will reject (56). The reverse is not necessarily true: accepting (56) does not necessarily imply accepting (55b) as well, for there may be other factors which come into play when it comes to licensing (55b).

Our present state of knowledge does not allow us to verify whether there is indeed a relationship of the sort described between (55b) and (56). But the fact that our analysis of ‘switch phenomena’ leads us to make a direct and verifiable prediction in this direction – something which earlier approaches to either (55b) or (56) do not – heightens the general interest of the approach developed in these pages.

11. Concluding remarks

This paper has presented a perspective on ‘clause union’ phenomena which factors them out into three main conditioners: (i) the structural location of AspP (‘preverb climbing’); (ii) the structural location of v/AgrO (‘agreement climbing’); and (iii) the presence/absence of an embedded IP dominating the clitic (‘clitic climbing’). A cline of ‘clause union’ effects has been found attested in Hungarian, analyzed as a function of the three factors just enumerated. ‘Clause union’ effects are not restricted to non-finite complementation constructions: even finite complementation exhibits it, iff the two requirements in (54) are both met. Our investigation of ‘clause union’ constructions in Hungarian, with particular reference to agreement

phenomena, has allowed us to argue that object agreement and accusative Case feature checking are not tied to Asp but to *v*/AgrO instead, with *v* standing a better chance of delivering the desired result in the domain of *faire à* causatives than does AgrO. The analysis of the first/second person pronoun system of Hungarian has furthermore led to the novel conclusion that Hungarian has object clitics, and has cast new light on the representation of clitic doubling constructions, an analysis in terms of a possessed noun phrase structure harboring both the clitic and the full noun phrase presenting itself in the light of the Hungarian facts. And we have also found occasion to trade the classic Case Filter/Visibility Condition in for Bošković's (1997) Inverse Case Filter, requiring that the uninterpretable Case features of non-substantive heads be checked (in the most economical way) but not requiring that every argumental noun phrase bear a Case feature.

Notes

* The roots of this paper sprouted from a discussion with Ildikó Tóth about the syntax of *hagy/enged* permissive-causative constructions. Her take on these constructions is now available in print as Chapter 5 of Tóth (2000), which critiques several aspects of the proposals laid out herein. The present paper was conceived and written in 1999, and appears here in its *original* incarnation (*modulo* some bibliographical updates). *Caveat lector*: since this paper's content dates back to 1999, it is not in all respects a reflection of current thinking. I thank Ildikó Tóth and István Kenesei for very useful comments on parts of the material discussed herein. Special thanks are due to Anikó Lipták for her many comments, suggestions and grammaticality judgments.

1. Historical grammars of Hungarian have reconstructed the genesis of *-l* as a second person inflectional marker in some detail (cf. e.g. Benkő 1991). It appears that *-l* came in first as a second person subject agreement marker in so-called *-ik* verbs (*ikes igék* in Hungarian) – verbs whose underlying object surfaces as a subject (unaccusative/ergative). These verbs get their name from the *-ik* marker found in the citation form of these verbs, the third person singular present tense indefinite form. Originally, *-l* seems to have functioned as the second person counterpart of this *-ik* marker. Eventually, *-l*'s distribution spread to other verb classes, and at a still later point the special *-lak/-lek* form for combinations of first person singular subjects and second person objects came in. With respect to the emergence of the *-lak/-lek* form, the existence of pairs like *kér/kérel* 'ask' seems to have been instrumental: there were certain verbs in earlier Hungarian which could add a (presumably non-inflectional) *-l* suffix to the stem. The first person singular form of such verbs would come out, in contexts in which there was an indefinite object, as either *kérek* or *kérelek*: *Én kér(el)ek valakit/téged* 'I ask something of someone/you'. The *kérelek* form simply disappeared with non-second person objects (only *én kérek valakit* being grammatical nowadays), with the *kérelek* form (shortened, via apocope, to *kérlek*) eventually specializing its distribution to constructions in which there is a second person object. The strength of such an approach to *-lak/-lek*'s emergence is its explanation for the fact that this form is restricted

to first person singular subjects. But it will need to be supplemented with an account for eventual second person object specialization. It is here that the phonological identity of the -*VI* suffix of *kérel* and the -*l* of the second person subject agreement marker of *ikes ígék* is presumably crucial – eventually, the -*l* of *kérelek téged* was reanalyzed as a marker of second person, this time not for the subject but for the object. It is reasonable, then, to take this -*l* to be a marker of second person agreement, even though the origins of this -*l* may lie elsewhere.

2. Desiderative verbs like *akar* ‘want’ can take subjunctive complements as well; we turn to these later (cf. Section 10, below).

3. The *van* case I am hinting at here involves ‘plain’ *van*, as in *Voltalak meglátogatni téged* ‘(I) was-LAK/LEK PV-visit-INF you’. As É. Kiss (1987:227) points out, *kész van* ‘be ready’ blocks the -*lak/-lek* form (*Kész vagyok/*vagylok felhívni téged* ‘(I) ready am/am-LAK/LEK PV-call-INF you, i.e. I am ready to call you’). The presence of *kész* apparently blocks clause union here, not too surprisingly.

4. See also É. Kiss (1987:228), who lists *jár* in the set of verbs allowing no -*lak/-lek* agreement; she even includes *elmegy* ‘go off’ in this set, but the speakers I have asked all find -*lak/-lek* agreement with *elmegy* acceptable.

5. The subset of subject-control verbs that largely pattern with aspectual *come/go* verbs has a rather haphazard constitution; four of the verbs in this set are so-called *ikes ígék*, bearing the suffix -*ik* (whose precise nature continues to pose questions; to some degree it is like Romance *se/si*). I cannot speculate here on the roots of the differences (with respect to definiteness agreement and -*lak/-lek* person agreement) between these subject-control verbs and other such verbs, like *utál* ‘hate’.

6. Subject-control verbs will not be assigned a class of their own, nor will the discussion to follow focus in much detail on their syntactic analysis. The rationale for this is three-pronged: (i) subject-control verbs do not constitute a homogeneous class in Hungarian with respect to agreement behavior, hence (ii) should presumably be divided up among the four classes identified with the aid of other verbs (*igyekszik* ‘strive’ fitting into class II, and *utál* fitting into classes III/IV); and (iii) subject-control verbs, in contradistinction to the other verb classes listed in classes I–IV, have received a good deal of attention in the literature already (cf. É. Kiss 1987:Ch. 5).

7. Hungarian ‘let’ permissive-causatives are the spitting image of French *laisser* permissive-causatives. They both participate in two syntactic patterns: the construction exemplified under IV in which the embedded subject bears dative Case (whenever the embedded VP is transitive), and an alternative construction which features ECM (Exceptional Case-marking) of the embedded subject. For Hungarian *hagy*, this construction is exemplified in (i). As expected, the verb agrees in definiteness with the embedded subject (the ECM’ed NP).

- (i) *Hagyod/*sz Jánost meglátogatni valakit.*
 let-2SG.DEF/*INDEF János-ACC PV-visit someone-ACC
 ‘You let János visit someone.’

The construction in (i) exhibits no 'clause union' effects, and will therefore be left unaddressed in the remainder of this paper. See Tóth (2000) for detailed discussion of the syntactic patterning of 'let' permissive-causatives in Hungarian.

8. Alternatively, if one wants the embedded clause to be infinitival, one may choose the *let*-ECM construction directly paralleling English 'I let János visit you'; we will not address this construction here since it does not exhibit 'clause union' effects (cf. n. 7).

9. In (25) we use the verb *próbálkozik* 'try' instead of the simpler form *próbál*, which also means 'try'; the reason is that the latter exhibits 'clause union' effects (which is surprising when viewed from the perspective of the distribution of 'clause union' in Romance):

- (i) <Meg>*próbálsz*/**od* <meg>*látogatni Pétert*.
 PV-try-2SG.DEF/*INDEF PV-visit Péter-ACC
 'You (will) try to visit Peter.'

The minimal difference between *próbálkozik* (which never allows preverb climbing or agreement with the embedded object) and *próbál* raises interesting questions. It seems likely that *próbálkozik* should be analyzed as a syntactic complex, with *-koz* introducing additional structure which blocks the upstairs generation of ν P/AgrOP. How to work this out in detail is something we will leave for another occasion (especially since questions concerning the function and semantics of this *-koz* morpheme are not particularly easy to answer).

10. We will return to this question in the next subsection.

11. A caveat is in order, though. For while (26) shows incontrovertibly that the dative-marked causee *can* c-command the embedded object and A-bind it, it does not show that the causee *must* always c-command the embedded object. We need precisely this stronger conclusion to keep the analysis offered in the main text going. We will therefore assume that the dative causee in *hagy* permissive-causatives always c-commands the embedded object (cf. also n. 15, below).

That this is a real issue is shown by the behavior of Italian *fare a* causatives. In Italian, the dative-marked causee of a *fare a* construction can bind an anaphoric embedded object (cf. (i); Burzio 1986:230). This indicates that the causee *can* c-command the embedded object in such constructions. Yet, on the other hand there are clear indications that the causee does not *have to* occupy a c-commanding A-position *vis-à-vis* the embedded object: constructions of the type in (i) and (ii) are grammatical (cf. Guasti 1993:54–55 for discussion):

- (i) *Con le minacce fecero accusare se stesso a Gianni.*
 with the threats they.made accuse himself to Gianni
 (ii) *Fatte pulire le toilette a Ugo, Lia fu felice.*
 made-F.PL clean the toilet-F.PL to Ugo Lia was happy
 (iii) *La macchina è stata fatta riparare a Gianni.*
 the car(F.SG) is been-F.SG made-F.SG repair to Gianni

The absolute construction in (ii) involves movement of *le toilette* to AgrOP (cf. Belletti 1990), and while one may wonder whether this is a case of overt-syntactic NP-movement or LF feature movement, (iii) is unmistakably a case of overt-syntactic NP-movement from out of the embedded object position into the matrix SpecIP. The presence of the dative-marked

causee is inconsequential, in both cases. With NP-movement constrained by Relativized Minimality (or minimalism's Minimal Link Condition), this shows that the dative causee does not necessarily occupy an A-position c-commanding the embedded object in Italian causatives. It seems likely, in fact, that in overt syntax the dative causee of Italian *fare a* causatives occupies the position occupied by the *to*-PP in an English type prepositional dative construction (cf. *I gave a book to John*), which does not c-command the object (cf. Barsa & Lasnik 1986). At LF, the formal features of the causee may make their way up to a position from which they can c-command the embedded object, to render anaphor binding possible; but LF feature movement will not create any RM/MLC problems for movement of the embedded object in examples of the type in (ii)/(iii). The facts of Hungarian discussed in the main text show that in Hungarian the dative-marked causee occupies an A-position c-commanding the embedded object *in overt syntax*.

12. The fine structure of Hungarian first and second person pronouns will be taken up in Section 5.

13. Hungarian differs, when it comes to the workings of clitic climbing, from Romance, where there is evidence that clitic climbing involves successive-cyclic head-movement (cf. Kayne 1989, 1991). Italian (i) is a particularly clear indication to this effect: clitic climbing from out of embedded infinitival *constituent* questions is possible while clitic climbing out of infinitival *yes-no* questions is blocked.

- (i) a. [?]*Non ti saprei che dire.* (Rizzi 1982:36; Kayne 1989:243)
 not CL.2SG would-know what say-INF
 b. **Non li so se fare.* (Kayne 1989:246)
 not CL.3PL know if do-INF

The facts in (i) are concrete empirical evidence in support of a head-movement analysis of Italian clitic climbing. By contrast, the blocking effect of dative-marked causees on clitic climbing in Hungarian is evidence that clitic climbing there involves an NP-movement step. Ultimately, we suspect, this difference between Romance and Hungarian reduces to a parametric difference in the domain of clitics with respect to their sensitivity to the Head Movement Constraint: Romance clitics can skip over some (but not all) intervening heads; Hungarian clitics cannot. How exactly this difference is to be given formal substance is a question we will have to eschew here (for want of sufficient background on which to base a formalization: the status of the HMC remains elusive in our present state of knowledge).

14. The agreement morphology seen in (30a, b) is fully identical with that found on possessed noun phrases in Hungarian. Whether the analysis of inflected infinitives should be fully assimilated to that of possessed noun phrases (see den Dikken 1999 for a full-fledged analysis of the latter) is a question that cannot receive a straightforward answer at this time, in particular because of the fact that there are non-trivial differences between inflected infinitives and possessed noun phrases (esp. concerning optionality of agreement marking and so-called 'anti-agreement': the former is found in inflected infinitives but not in possessed nominals, while the latter is a hallmark of possessed nominals which does not manifest itself in inflected infinitives; see Tóth 2000 for discussion). We will avoid the issue here.

15. This ties in well with the fact that verbs participating in *faire à* constructions always seem to be able to take a dative-marked argument independently (as in French *Je lui fais un plaisir* 'I him-DAT make/do a pleasure').

A complication arises from the fact that Hungarian triadic dative constructions do not block the *-lak/-lek* form: (i) is grammatical. Notice, however, that (ii) is also grammatical (just like its English counterpart) – and here we need the direct object (a null pronoun) to c-command the dative anaphor. With (i) also derived from a structure in which the direct object c-commands the dative indirect object, no blocking effect by the latter will ensue, as desired. In *hagy* permissive-causatives, there apparently is no representation in which the dative is lower than the causativized infinitival constituent. Put differently, 'dative shift' (i.e., raising of the dative into a position c-commanding the direct object/infinitival constituent) is ostensibly obligatory in *hagy* constructions. Though it will lead us too far afield to develop this line of argument in detail, it seems to us that the obligatoriness of 'dative shift' in these constructions can be tied in with the 'clause union' effects found in these constructions: 'dative shift' facilitates 'clause union'; non-application of 'dative shift' obstructs it.

- (i) *Megmutattalak* *Jánosnak*.
 PV-show-PAST-LAK/LEK János-DAT
 'I showed you to János.'
- (ii) *Megmutattalak* *magadnak* (*a tükörben*).
 PV-show-PAST-LAK/LEK yourself-DAT the mirror-in
 'I showed you to yourself (in the mirror).'

16. This is tantamount to saying that XP in the structure in (27) is a dative small clause; see den Dikken (1995: Ch. 5) for an analysis of *faire à* causative constructions along such lines. The predication relation between the dative PP harboring the causee and the infinitival constituent establishes the desired interpretive relationship between the two (without reference to θ -roles of sorts).

17. There is a further split in the domain of Hungarian object clitics, between overt and covert/null forms. The first person object clitic is *always* null in Hungarian; and in the domain of second person object clitics, we find a split between constructions having a first person singular subject and other constructions, with the clitic showing up overtly (in the form of *-l*, resulting in the *-lak/-lek* marker) in the former only. See n. 1, above, for discussion of the historical roots of this state of affairs.

18. See also Simonyi (1907:254) for this parallel: *engem* 'mein ich'. The forms in (34d', e') also feature this inflectional morphology, but this time it is affixed to a locative adposition, *ben*. We will turn to these cases further below, ignoring them for the time being.

19. The intrusive *-g-* in *engem* and *téged* as well as the vowel shortening/lengthening processes evinced by these forms raise questions which we cannot address at this time. Historical grammars have little to offer with respect to these two properties of *engem* and *téged*; all Benkő (1991) says is that the *-g-* may go back to a reconstructed **-ng-* whose nature/function remains obscure. For want of deeper knowledge we will ignore these details here, though ultimately they may prove to be important, for instance when it comes to choosing between the two options outlined in the preceding discussion. ('NP*' in (36) is some extended projection of N, presumably smaller than DP.)

20. This is not to say that *ő* does not have a possessed form – in fact, it does: *övé* ‘his/hers’, found in such constructions as ‘this is your book, that is his/hers’, is the regular possessed form. The other pronouns also have possessed forms like this, and these are not identical to the possessed forms found in the accusative paradigm:

- (i) a. *enyém* ‘mine’
- b. *tied/tiéd* ‘yours_{sg}’
- c. *övé* ‘his/hers’
- d. *mienk/miénk* ‘ours’
- e. *tietek/tiétek* ‘yours_{pl}’
- f. *övék* ‘theirs’

An important constant in these forms is that they all contain an *-e/é-*, and it is this vowel that can be taken to represent the possessum in these forms. In the first/second person accusative forms in (34) there is no extra element (abstracting away from the mysterious *-g-* of *engem* and *téged*) which could be taken to be the overt possessum. We speculate that Hungarian possessums must always be overt, however tiny – *-e/é-* suffices as a host for possessive morphology; but a completely null possessum does not seem to exist. This, if true, is another reason for preferring the option taken in the main text to the one that treats the overt pronoun as the possessor of a completely null possessum.

21. If we are right in assigning a partitive analysis to *benneteket* (even in present-day Hungarian), the occurrence of the *-l* in *szeretlek benneteket* poses a question. Here *-l* cannot be a clitic originating as the possessor of a second person object pronoun; nor does it seem a reasonable candidate for the head of the partitive structure that *benneteket* represents (since ‘you from among you’ makes little semantic sense). Though we have no data to substantiate this claim, we hypothesize that the *-lak/-lek* form with *benneteket* is a case of analogy, triggered by the occurrence of the *-lak/-lek* form with the other second person object pronouns of Hungarian.

22. Thus, it is essentially true that first/second person object pronouns *per se* are not marked for definiteness; but given our representation of object pronouns this does not lead us to claim that the NP* dominating first/second person object pronouns likewise has no [+definite] feature in it: we can have our cake and eat it, too, as it were, by locating the [+definite] feature on the possessor (the clitic).

23. Recall that for the *ben*-marked forms *bennünket* and *benneteket* we have proposed an analysis according to which these function, outwardly, as indefinite-headed partitive noun phrases.

24. At least for some speakers; recall that É. Kiss (1987:228) denies *jár* membership of this set, and István Kenesei (p.c.) tells me that for him *Jártalak meglátogatni téged* ‘(I) come-PAST-LAK/LEK PV-visit-INF you’ is not very good either, but I have found several speakers for whom such sentences are marginally or even fully acceptable. It is those speakers’ judgments which construe the main text argument.

25. The text statement holds true for so-called ‘neutral sentences’. In constructions featuring some operator (like negation or focus) ‘preverb climbing’ is impossible (cf. (i)). In general, the presence of such operators blocks placement of preverbs in front of the finite verb, also in single-verb constructions (cf. (ii)). Since their properties do not directly impinge on the themes of the present paper, we will not concern ourselves with ‘non-neutral sentences’ here,

and will skirt the question of what makes pre- V_{fin} placement of preverbs impossible in such constructions (see Koopman & Szabolcsi 2000 and references cited there for discussion).

- (i) a. **Nem meg foglak látogatni.*
 not PV will-LAK/LEK visit-INF
 b. *Nem foglak meglátogatni.*
 not will-LAK/LEK PV-visit-INF
 'I will not visit you.'
- (ii) a. **Nem meglátogatlak.*
 not PV-visit-LAK/LEK
 b. *Nem látogatlak meg.*
 not visit-LAK/LEK PV
 'I do not visit you.'

26. Unfortunately I am not aware of any acquisition data concerning 'clitic climbing' effects in class II constructions, nor do I know of any child language data on 'clause union' phenomena with the other classes of verbs.

27. Papp (1998:268) ascribes these errors to the presence of *is* 'too', misanalyzed as an operator of the type blocking pre- V_{fin} placement of preverbs (cf. n. 25). But across the board, 'preverb climbing' in contexts in which it is obligatory in the adult language seems to come in late (cf. Papp 1998:270); so the text examples do not seem peculiar to constructions featuring *is*.

28. The matrix verb form *akartam* is unmarked for definiteness (it so happens that the first person singular past tense form is underspecified in this regard).

Though (48) with 'preverb climbing' is indeed bad, grammatical examples of 'pv-climbing' out of the subjunctival complement of *akar* have been reported in the literature. Thus, É. Kiss (1998:135) mentions (i-a). A number of things should be noted about such examples, however. First, 'pv-climbing' is by no means obligatory here (in contradistinction to the non-finite complementation context) – alongside (i-a) we find the alternative word order patterns in (i-b) and (i-c), in which the preverb finds itself in the complement clause. (Prescriptive grammars frown upon (i-b), but it is widely attested in everyday Hungarian.)

- (i) a. *János el akarja hogy menjek.*
 János PV want-3SG.DEF that go-SUBJUNC-1SG.INDEF
 b. *János akarja hogy el menjek.*
 c. *János akarja hogy menjek el.*
 'János wants me to go away.'

Secondly, it appears to be significant that (i-a) has a *pro*-dropped embedded subject: with an overt embedded subject, (i-a) degrades substantially (cf. ??*János el akarja hogy Péter menjen*), for reasons unclear. Thirdly, 'preverb climbing' out of subjunctive complements to *akar* is selective with respect to particular preverbs: *el* works particularly well, *meg* is less felicitous (cf. ?*János meg akarja hogy látogassam* 'János PV want-3SG.DEF that visit-SUBJUNC-1SG.DEF'), and very poor is 'preverb climbing' performed on a non-compositional, idiomatic preverb-verb combination (cf. ?**János be akarja hogy rúgjak* 'János PV want-3SG.DEF that get.drunk-SUBJUNC-1SG.INDEF'); the corresponding non-finite constructions are perfect in all cases.

The deviance of the idiomatic example suggests that the operation by which the preverb ends up in the matrix clause in subjunctive complementation constructions is a case of A'-movement, not a garden-variety case of 'preverb climbing'. If this is right, this makes (i-a) irrelevant with respect to the text discussion of 'clause union' effects.

That the facts about subjunctive complements to *akar* are not of great significance in the context at hand is further confirmed by the fact that all of the effects laid out in (46)–(47) can be reproduced with bridge verbs that do not take subjunctival complements, such as *gondol* 'think'. The subjunctive and its peculiar properties are not crucially implicated here, therefore. The reason why we have selected examples of *akar* +subjunctive in this section is that, overall, these are felt to work somewhat better than constructions with *gondol*.

29. As Brody (1995) has argued, *wh*-movement in questions and focus movement target the same structural position: SpecFocP.

30. Besides, (i-a), with non-focused *téged* in the matrix clause (which is liable to *pro*-drop; cf. (i-b)), is much worse than (50).

- (i) a. ??*Akarlak téged hogy menjél.*
 want-LAK/LEK you-ACC that go-SUBJUNC-2SG.INDEF
 b. ??*Akarlak hogy menjél.*
 want-LAK/LEK that GO-SUBJUNC-2SG.INDEF
 'I want you to go.'

The fact that (i) does not seem to be entirely impossible for some speakers raises interesting questions, but these are clearly orthogonal to the text discussion. We will leave them aside.

31. For technical reasons, we cannot assume that *pro* is actually coindexed with the embedded subject, for this would yield a violation of Principle C of the Binding Theory in (52): the trace of *téged* would be A-bound within the domain of its maximal A'-chain. So feature agreement is not necessarily reflected by coindexation.

32. We know from Szabolcsi's (1983, 1994) work that possessors can 'run away from home'; but these normally are dative-marked possessors, which occupy, or in any event transit through, an A'-position (SpecDP). The structure of pronominally headed noun phrases is presumably smaller than DP, however; and extraction of the possessor of *téged* will then be possible without touching down in SpecDP. Details remain to be worked out.

33. This may be a simplification – cf. Kenesei (1992) for the idea that Hungarian complement clauses with *hogy* 'that' are in a chain with a (*pro*-droppable) accusative pronoun *azt* – but it will suffice for our purposes here.

34. The discussion of (24a) in Section 4.3 is compatible with the Inverse Case Filter approach, as we pointed out there: though there is a way of capturing the deviance of (24a) with reference to the classic Case Filter (applied to *téged*), there are causes independent of the Case Filter which make the sentence bad, one of these in fact lying in the Inverse Case Filter.

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